



## 1. Application details

### 1.1. Permit application details

Permit application No.: 634/1  
Permit type: Area Permit

### 1.2. Proponent details

Proponent's name: City of Rockingham

### 1.3. Property details

Property:  
 LOT 11 ON DIAGRAM 46121  
 LOT 1 ON PLAN 6980  
 LOT 2 ON PLAN 6980  
 LOT 3 ON PLAN 6980  
 LOT 4 ON PLAN 6980  
 LOT 5 ON PLAN 6980  
 LOT 6 ON PLAN 6980  
 LOT 7 ON PLAN 6980  
 LOT 8 ON PLAN 6980  
 LOT 9 ON PLAN 6980  
 LOT 220 ON PLAN 40792  
 LOT 51 ON DIAGRAM 58419  
 LOT 2 ON DIAGRAM 50963  
 City Of Rockingham

Local Government Area:  
Colloquial name:

### 1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
3.3		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
Beard vegetation association 3048: Shrublands; scrub-heath on Swan Coastal Plain (Shepherd et al, 2002)	The proposal includes the clearing of 3.3 hectares for the construction of an additional carriageway for existing Dixon Road, south of the existing road reserve. This area has been substantially degraded through past land management activities such as the installation of firebreaks and the invasion of weeds around areas of disturbance.	Degraded: Structure severely disturbed; regeneration to good condition requires intensive management (Keighery 1994)	Vegetation clearing description based on information obtained through vegetation surveys conducted by both BSD Consultants (2003), Vision Environment (2004), and observations from the site inspection conducted on 05/09/2005.
Heddl vegetation complex: Quindalup Complex: Coastal dune complex consisting mainly of two alliances - the strand and fore-dune alliance and the mobile and stable dune alliance. Local variations include the low closed forest of <i>M. lanceolata</i> - <i>Callitris preissii</i> and the closed scrub of <i>Acacia rostellifera</i> . (Heddl et al, 1980)	Vegetation mapping conducted by Vision Environment (2004) identifies six distinct zones of vegetation present along the proposed road route. These are Tuart woodland with <i>Xanthorrhoea preissii</i> understorey, Tuart woodland with <i>Acacia</i> and <i>Xanthorrhoea preissii</i> understorey, Tall <i>Acacia</i> thicket, Sedge contaminated damplands, <i>Xanthorrhoea preissii</i> dominated damplands, and areas mostly cleared of native vegetation.  Vision Environment (2003) notes that vegetation within the area is very degraded, with most area consisting of canopy species such as <i>Eucalyptus gomphocephala</i> , <i>Melaleuca raphiophylla</i> and <i>Acacia rostellifera</i> over an understorey predominantly made up of exotic 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 is not likely to be at variance to this Principle**

The area under application consists primarily of existing fire breaks and vegetation impacted through weed invasion and edge effects. Based on the current condition of this vegetation, the limited understorey, and relatively low number of large trees, it is considered unlikely that approval of this proposal will impact on biodiversity in the local area.

**Methodology**    Site inspection (05/09/2005)

#### (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 primarily confined to an existing firebreak directly adjacent to Dixon Road. The vegetation condition along this proposed road alignment is described as being degraded, in most cases not containing understorey vegetation. It is therefore not considered that the clearing of vegetation from within the proposed area will impact on the availability of habitat which is not well represented within surrounding vegetated areas.

**Methodology**    Site inspection (05/09/2005)

#### (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 search of relevant databases by BSD Consultants Pty Ltd (2003) identified five significant flora species within the area surrounding the application. These species are Jacksonia serivea (P4), Verticordia plumosa var. pleibotrya (R), Cardamine paucijuga (P2), Grevillea olivacea (P4), and Lepidium puberulum (P4).

A flora survey conducted by BSD Consultants Pty Ltd in October 2003 did not identify any Declare Rare or Priority Flora within the area of vegetation under application.

**Methodology**    BSD Consultants Pty Ltd (2003)

#### (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**

A vegetation survey conducted by BSD Consultants (2003) identified that the vegetation under application was degraded in nature, making it impossible to define with any degree of certainty the floristic community types of the vegetation.

CALM (DOE Trim ref: 2005I/1354) advise that several occurrences of TEC Community: SCP19b; (Woodlands over sedgeland in Holocene dune swales of the southern Swan Coastal Plain) (Beard xSZc; Scrub heath on dunes) have been recorded in close proximity of the proposed clearing.

Identified threats to this TEC include: Clearing, inappropriate fire regime, grazing by native or introduced, hydro change, disturbance due to recreational activities, and weed invasion. Supporting evidence indicates that the land in question has been subject to all of these identified threats, and as a result is now in a significantly degraded condition. Photographic evidence shows that the majority of the understorey species are absent, with only the more resilient taxa such as Xanthorrhoea preissii, and Eucalyptus gomphocephala extant, albeit with evidence of repeated fire events.

The vegetation that is proposed to be cleared is so significantly modified that it is not possible to conclusively determine by desktop assessment whether a TEC is present, since the majority of the key identifiers that characterize the TEC are absent. CALM advise that they are unable to determine whether TEC were either, (a) present and have succumbed to the aforesaid impacts, or (b) never present. Based on the limited time with which to review the supporting documents, by desktop assessment, as distinct from field inspection, the proposal would appear to be unlikely to be at variance to Principle (d) of Schedule 5 of the Environmental Protection Act 1986.

**Methodology**    BSD Consultants (2003)  
CALM (DOE TRIM ref: 2005I/1353)

**(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 proposed to be cleared is defined as Beard vegetation association 3048 (Hopkins et al. 2001) and Heddle vegetation complex Quindalup Complex (Heddle et al. 1980), of which association 3048 has a representation below 30%.

The State Government is committed to the National Objective Targets for Biodiversity Conservation, which includes targets that prevent clearance of ecological communities with an extent below 30% of that present pre-1750 (Department of Natural Resources and Environment 2002; EPA 2000). Beyond this value, species extinction is believed to occur at an exponential rate and any further clearing may have irreversible consequences for the conservation of biodiversity and is, therefore, not supported.

While association 3048 is under the recommended 30% retention amount, it is noted that 19.2% of the association is contained within reservation, which is higher than the recommended 15% level (EPA, 2000). The EPA recognises that vegetation within constrained areas can be varied to a minimum level of 10% representation (EPA, 2003).

It is therefore considered that the approval of this application will not significantly impact on the representation of the vegetation complex.

	Pre-European area (ha)	Current extent (ha)	Remaining %*	Conservation status**	% in reserves/CALM-managed land
IBRA Bioregion	1,529,235	657,450	43%	Depleted	
City of Rockingham	24,326	8,534	35.1%	Depleted	
Beard vegetation association - 3048	14,575	4,184	28.7%	Vulnerable	19.2%
Heddle vegetation complex - Quindalup Complex	38,238	18,000	47.1%	Depleted	5.2%

\* (Shepherd et al. 2001)

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

**Methodology** Hopkins et al (2001)  
Heddle et al. (1980)  
Department of Natural Resources and Environment (2002)  
EPA (2000)  
Shepherd et al (2001)

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

The proposed Dixon Road duplication intersects one of two defined Resource Enhancement Wetland contained within Lot 11 Dixon Road. Vegetation mapping undertaken by Ecoscape Australia (BSD Consultants, 2003) identifies the vegetation within this area as a woodland of Tuart, with a small stand of *Acacia rostellifera*.

The Water and Rivers Commission (2001) contains recommended buffer distances for developments from wetland areas, with the minimum distance being 50 metres. The proposed clearing does not comply with these recommendations.

Observations made during a site inspection on the 5/9/2005 and from aerial photography of the area found that the majority of vegetation within this wetland area has already been cleared as a result of fire break installation. It is therefore considered not likely to impact significantly on the wetlands vegetation values (pers comm. DOE Wetlands Branch, 04/11/2005).

**Methodology** Site inspection (05/09/2005)  
BSD Consultants (2003)  
Water and Rivers Commission (2001)  
GIS Databases:  
- Geomorphic Wetlands (Mgt Categories), Swan Coastal Plain - DOE 15/09/04  
- EPP, Lakes - DEP 28/07/03  
- Swan Coastal Plain South 40cm Orthomosaic y DLI 05

**(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 removal of vegetation for the proposed Dixon Road duplication has the potential to increase both wind and water erosion in the area. Through the approval of development by the WAPC, conditions have been placed on the City of Rockingham to provide ensure the minimisation of water erosion in the Bush Forever site, through the preferential location of drainage and drainage facilities within the median strip / road reserve.

The area of vegetation under application is defined as having no known risk of shallow or deeper acid sulphate soil or potential acid sulphate soil.

Due to the relatively narrow dimensions of the clearing, and the already cleared and degraded state of the area, it is not expected that erosion would increase be any appreciable amount.

**Methodology** Site inspection (05/09/2005)  
GIS Database:  
Acid Sulphate Soil Risk Map, SCP DOE 04/11/04

**(h) Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area.**

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

The proposed Dixon Road duplication is located within Bush Forever Site 356, an area recognised for its representation of ecological communities, significant flora, and ecological linkages (Government of Western Australia, 2000). This area has also been included on the Register of the National Estate, being recognised nationally for its significant environmental values. Comments provided to the City of Rockingham from the Bush Forever Office in 2003 (DOE Trim Ref: IN21623) acknowledges that from the information provided, the proposed road would not have a significant impact on the Bush Forever Site.

The area under application is also located within relatively close proximity to the CALM managed Leda Nature Reserve. Based on limited extent of the proposed clearing, and condition of vegetation under application, it is not considered that approval of this application will appreciably impact on these areas.

**Methodology** Government of Western Australia (2000)  
GIS Databases:  
- CALM Managed Lands and Water - CALM 01/08/04  
- Bushforever - MSP 07/01  
- Register of the 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**

Clearing within the proposed roadway alignment has the potential to increase the risk of erosion and subsequent sedimentation problems, and increase surface water runoff which may potentially exacerbate water quality problems through eutrophication and pollutants. Conditions placed on the approved development by the Western Australian Planning Commission ensure the minimisation of water erosion in the Bush Forever site, through the preferential location of drainage and drainage facilities within the median strip / road reserve. These measures, and the limited amount of clearing, should adequately manage potential impacts on surface water or groundwater.

**Methodology** Site inspection (05/09/2005)  
GIS Databases:  
- Hydrography, linear - DOE 01/02/04  
- Geomorphic Wetlands (Mgt Categories), Swan Coastal Plain y DOE 15/09/04

**(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 proposed roadway alignment intersects one Resource Enhancement Wetland within Lot 11 Dixon Road. Clearing of vegetation within the proposed area is limited due to the presence of existing firebreaks along the majority of the area. Although the clearing of vegetation will increase water infiltration to the groundwater table, the scale and amount of clearing makes this application unlikely to appreciably impact on localised flooding in the area.

**Methodology** Site inspection (05/09/2005)  
GIS Database:  
- Hydrography, linear - DOE 01/02/04

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

**Comments**

The Bush Forever Office of the Department of Planning and Infrastructure provided comments to the City of Rockingham on 16 April 2003, offering informal in-principle support for proposed Dixon Road duplication, subject to the provision of advice on DRF and TEC, as well as the creation of an Environmental Management Plan.

The Western Australian Planning Commission approved the construction of a second carriageway for Dixon Road on the 27 July 2004. This approval contains conditions such that the City of Rockingham must comply with development works as outlined in supporting documentation, and that the City prepare, obtain approval for, and implement a Rehabilitation, Restoration, and Weed Management Plan for the adjoining Bush Forever Site 356 and Rockingham Lakes Regional Park.

**Methodology**

**4. Assessor's recommendations**

Purpose	Method	Applied area (ha)/ trees	Decision	Comment / recommendation
Road construction or maintenance	Mechanical Removal	3.3	Grant	<p>The assessable criteria have been addressed, and it has been found that the proposal may be at variance to Principles (e), and (f).</p> <p>- For Principle (e), one Beard vegetation association is recognised as being below the 30% minimum the State Government has committed to within the National Objectives and Targets for Biodiversity Conservation (Department of Natural Resources and Environment 2002, EPA 2000). However, given the small, narrow, linear nature of the area under application, and the degraded quality of the vegetation, it is considered that the clearing as proposed is unlikely to significantly impact on the conservation status of the vegetation association.</p> <p>- For Principle (f), the proposed roadway alignment intersects one Resource Enhancement Wetland. The area under application has been previously cleared of vegetation for the maintenance of a firebreak, and thus is not expected to have any appreciable impact on that wetland area.</p> <p>Therefore the assessing officer recommends that the permit be granted, with the following advice.</p> <p>The Department of Environment recommends that the City of Rockingham, in their commitment to produce a Rehabilitation, Restoration and Weed Management Plan, address the environmental values of both Resource Enhancement Wetlands within Lot 11 Dixon Road, with a view to enhancing these wetlands to Conservation Category status.</p>

**5. References**

BSD Consultants Pty Ltd (2003). Declared Rare and Priority Flora Search - Dixon Road Duplication.

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.

EPA (2003) Guidance for the Assessment of Environmental Factors -level of assessment of proposals affecting natural areas within the System 6 region and Swan Coastal Plain portion of the System 1 Region. Report by the EPA under the Environmental Protection Act 1986. No 10 WA.

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.

Hopkins, A.J.M., Beeston, G.R. and Harvey J.M. (2001) A database on the vegetation of Western Australia. Stage 1. CALMScience after J. S. Beard, late 1960's to early 1980's Vegetation Survey of Western Australia, UWA Press.

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

Vision Environment (2004). Vegetation Mapping of the Dixon Road Precinct, Rockham Lakes Regional Park.

Water and Rivers Commission (2001). Position StatementL Wetlands

## 6. Glossary

Term	Meaning
CALM	Department of Conservation and Land Management
DAWA	Department of Agriculture
DEP	Department of Environmental Protection (now DoE)
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 DoE)