



1. Application details

1.1. Permit application details

Permit application No.: 2010/1
 Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: Shire of Murray

1.3. Property details

Property: ROAD RESERVES AND DRAINAGE RESERVES
 Local Government Area: Shire of Murray
 Colloquial name: Various road and drainage reserves throughout Shire of Murray including: Beacham Road; Corio Road/Lakes Road intersection; Davis Road; Del Park Road; Dunkerton Road; Eyre Close; Fiegert Road; Flinders Close; Greenlands Road; Greenwood Way; Hampton Road; Hart Road; Hastings Road; Lakelands Road; Mears Road; Old Bunbury Road; Passive Place; Paterson Road; Peaceful Waters; Pinjarra Road; Powell Road; Readhead Road; River Road; Shenton Road; Lakelands Drainage Reserve.

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
4.325		Cutting	Road construction or maintenance, and drain 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 Complexes:	The proposed clearing includes 4.325 hectares of native vegetation over a total of approximately 73km of road and drainage reserve for the reconstruction and maintenance of road reserves and drains within the Shire of Murray.	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 11 September 2007.
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 sedgeland which occupy the moister sites.	The vegetation under application on the Swan Coastal Plain comprises predominantly individual <i>Corymbia calophylla</i> , with <i>Melaleuca raphiophylla</i> and <i>Eucalyptus rudis</i> in the lower areas. The majority of the vegetation under application has no understorey present, however some areas contain <i>Xanthorrhoea preissii</i> , <i>Acacia pulchella</i> and sedges.		
Cannington Complex - Mosaic of vegetation from adjacent vegetation complexes of Bassendean, Karrakatta, Southern River and Vasse.	In the Barragup and Lakelands area, the vegetation under application comprises <i>Kunzea glabrescens</i> , <i>Banksia</i> spp., <i>Allocasuarina fraseriana</i> and <i>Adenanthos</i> spp.		
Guildford Complex - A mixture of open forest to tall open forest of <i>Corymbia calophylla</i> - <i>E. wandoo</i> - <i>E. marginata</i> and woodland of <i>E. wandoo</i> . Minor components include <i>E. rudis</i> - <i>M. raphiophylla</i> .	The vegetation under application on the Scarp comprises individual <i>Eucalyptus</i> spp. with limited understorey.		
Herdsmen Complex - Sedgeland and fringing woodland of <i>E. rudis</i> - <i>Melaleuca</i> species.	The vegetation under application is contained within existing road reserves and drainage reserves, and is mainly in degraded to completely degraded condition with the exception of some areas that contain vegetation in good condition.		
Southern River Complex - Open woodland of <i>C. calophylla</i> - <i>E. marginata</i> - <i>Banksia</i> species with fringing woodland of <i>E. rudis</i> - <i>M. raphiophylla</i> along creek beds.			
Swan Complex - Fringing woodland of <i>E. rudis</i> - <i>M. raphiophylla</i> with localised occurrence of low open forest of <i>Casuarina obesa</i> and <i>M.</i>			

cuticularis.

Vasse Complex - Mixture of the closed scrub of *Melaleuca species* fringing woodland of *E. rudis* - *Melaleuca species* and open forest of *E. gomphocephala* - *E. marginata* - *C. calophylla*.

Mattiske Vegetation Complexes:

Dwellingup (D1) - Open forest of *Eucalyptus marginata subsp. marginata-Corymbia calophylla* on lateritic uplands in mainly humid and subhumid zones.

Murray 1 (My1) - Open forest of *Eucalyptus marginata subsp. marginata-Corymbia calophylla-Eucalyptus patens* on valley slopes to woodland of fs24 *Eucalyptus rudis-Melaleuca raphiophylla* on the valley floors in humid and subhumid zones.

Yarragil (Yg1) - Open forest of *Eucalyptus marginata subsp. marginata-Corymbia calophylla* on slopes with mixtures of *Eucalyptus patens* and *Eucalyptus megacarpa* on the valley floors in humid and subhumid zones.

Beard Vegetation Associations:

3 - Medium forest; jarrah-marri

4 - Medium woodland; marri and wandoo

999 - Medium woodland; marri

1000 - Mosaic: Medium forest; jarrah-marri / low woodland; banksia / low forest; tea tree

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 vegetation under application within road and drain reserves in the Shire of Murray is mostly in degraded to completely degraded condition with the exception of vegetation within Readhead Road, Hart Road, Greenlands Road and the Lakelands Drainage Reserve, which is considered to be in good condition. A portion of the vegetation under application has the potential to provide significant habitat for indigenous fauna and may include Declared Rare Flora.

The vegetation that is in a completely degraded to degraded condition lacks understorey vegetation and would therefore not be considered likely to comprise a high level of biodiversity. Vegetation in good condition contains some understorey and a higher species diversity, and although thin and linear, may represent an area of high biological diversity, especially when viewed in the context of the highly cleared landscape in the local area.

The vegetation under application on Readhead Road, the Corio Road/Lakes Road intersection and roads in Barragup and Lakelands may include DRF and Priority flora species. In addition, the vegetation on Readhead Road has the potential to contain the sedge species *Meeboldina cana* and *Meeboldina decipiens* that are considered to be significant in the local area (Peel Harvey Catchment Council 2007).

It is therefore considered that a portion of the vegetation under application may comprise a high level of biodiversity and the proposed clearing may be at variance to this Principle.

The Shire of Murray has committed to consulting with the local Landcare group in regards to clearing vegetation near to the sedge species on Readhead Road. In addition to address this issue conditions will be placed on the permit, with these conditions outlined within principle (b) and (c) below.

Methodology

DEC site visit 11/9/07

Peel Harvey Catchment Council (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

Within the Shire of Murray there are numerous recorded occurrences of significant fauna including the following that have the potential to utilise the vegetation under application:

- Forest red-tailed Black Cockatoo (*Calyptorhynchus banksii naso*, VU),
- Brush-tailed Phascogale (*Phascogale tapoatafa ssp.*, VU),
- Peregrine Falcon (*Falco peregrinus*, Specially Protected),
- Chuditch (*Dasyurus geoffroi*, VU),
- Australian Bustard (*Ardeotis australis*, P4),
- Numbat (*Myrmecobius fasciatus*, VU),
- Quenda (*Isodon obesulus fusciventer*, P5),
- Western False Pipistrelle (*Falsistrellus mackenziei*, P4).

The vegetation under application is limited to 4.325 hectares over 73 km of road and drainage reserves and is mainly in degraded to completely degraded condition. There is a lack of understorey within the majority of the areas under application which would limit the habitat potential in these areas for ground dwelling fauna species such as the Quenda. There are some areas of vegetation in good condition with understorey that may provide some habitat for these species.

The *Banksia spp.* under application in the Barragup and Lakelands area may provide some feeding habitat for bird species such as the Forest Red-tailed Black Cockatoo, however this is not considered likely to be significant given the limited vegetation under application in these areas and the remnant vegetation in the surrounding nature reserves.

The vegetation under application on Greenlands Road, Del Park Road and River Road includes mature Eucalyptus trees that have the potential to contain hollows suitable to be utilised for habitat by a range of native fauna including Forest Red-tailed Black Cockatoo, Western False Pipistrelle and the Chuditch that are found within 5km of the areas under application.

The vegetation under application is contained within road reserves in a Shire that has been extensively cleared for agriculture on the Swan Coastal Plain portion and any habitat provided by vegetation in these highly clearing areas may be considered significant.

Given the potential for the applied vegetation to provide habitat hollows and ecological linkages for fauna in an area that has been extensively cleared for agriculture, it is considered that the vegetation under application may comprise significant habitat for indigenous fauna.

To mitigate any loss of habitat within the areas proposed to be cleared conditions will be placed on the permit to ensure surveys are undertaken by a fauna specialist to identify trees that may be suitable as habitat for specially protected fauna under the Wildlife Conservation Act and, where applicable, translocation of fauna is undertaken. An offset condition will also be imposed requiring revegetation to offset the values of the vegetation cleared.

Methodology DEC site visit 11/9/07
GIS Database:
SAC Bio datasets accessed 13/9/07

(c) Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, rare flora.

Comments Proposal may be at variance to this Principle

There are more than 50 known populations of the Declared Rare Flora (DRF) *Drakaea elastica*, *Drakaea micrantha*, *Diuris purdiei*, *Caladenia huegelii*, *Synaphea stenoloba*, *Synaphea sp.* Fairbridge Farm, *Synaphea sp.* Pinjarra and *Diuris drummondii*, within the local area (5km radius of all the areas under application), the closest of which include the following:

- *Synaphea sp.* Pinjarra located 1.8km southeast of Lakes Road/Corio Road intersection;
- *Drakaea elastica* located 900m northwest of Old Bunbury Road (near Dutchman Road);
- *Drakaea elastica* located 200m north of Lakelands Road.

These DRF and the areas under application are found within the same vegetation complexes and soil associations.

D. elastica is generally found in low-lying situations adjoining winter-wet swamps (Western Australian Herbarium 1998-) and is often found under thickets of *Kunzea glabrescens* (DEC undated). The vegetation under application in the Barragup and Lakelands area includes *Kunzea glabrescens* located in roadside drainage swales. DEC's Species and Communities Branch advises that there is the potential for *D. elastica* to occur in these drainage swales under 10 year old regrowth *K. glabrescens* as *D. elastica* has been seen in

younger *Kunzea* regrowth, and given the habitat type, proximity to moisture and the proximity of known populations.

Synaphea sp. Pinjarra is generally found in grey, clayey sand; and *Synaphea* sp. Fairbridge Farm is generally found in sand with lateritic pebbles near winter-wet flats, in low woodland with weedy grasses (Western Australian Herbarium 1998-). This species is found 4km from vegetation under application in good condition on Readhead Road, within the same soil association.

There are also over 50 known populations of priority flora within the local area, with one population of *Acacia benthamii* (P2) having been recorded at the junction of Readhead Road and Hopeland Road, adjacent to the area under application on Readhead Road. There is also one population of *Pimelea rara* (P4) located within Del Park Road Reserve.

Given that a portion of the vegetation under application on Readhead Road, Hart Road and Greenlands Road, and in the Lakelands and Barragup areas is in good condition and contains some understorey and habitat suitable for DRF and priority flora in the local area. It is therefore considered that the vegetation under application on the above roads may include, or be necessary for the maintenance of, rare flora.

To ensure DRF and priority species are identified prior to clearing and managed accordingly, a condition will be placed on the permit to ensure surveys are undertaken by a flora specialist to identify the presence of any DRF or priority species within the areas proposed for clearing detailed above. Where DRF species are identified the Shire will be required to submit the records to the Department of Environment and Conservation ensuring no species are removed unless approved by the CEO.

Methodology DEC site visit 11/9/07
DEC Threatened Species Branch (2007)
Western Australian Herbarium (1998-)
GIS Databases:
SAC Bio datasets accessed 03/09/07

(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

Within a 5km radius of all the areas under application there are 11 known occurrences of Threatened Ecological Communities (TEC) the closest of which have been identified as the following Floristic Community Types (FCT):

- FCT 9 (Dense shrublands on clay flats) and SCP 3a (*Eucalyptus calophylla* - *Kingia australis* woodlands on heavy soils) located 600m to the south of Pinjarra Road (near Phillips Road),
- FCT 7 (Herb rich saline shrublands in clay pans) located 1.1km to the west of the applied area on Greenlands Road, and
- FCT 10a (Shrublands on dry clay flats) and FCT 3b (*Eucalyptus calophylla* - *Eucalyptus marginata* woodlands on sandy clay soils) located 3km to the west of Old Bunbury Road (near Hill Road).

The majority of vegetation under application is in degraded to completely degraded condition, with no understorey present.

Given the distance from the areas under application to the nearest TEC, and given the mostly degraded to completely degraded condition of the vegetation under application, it is therefore not considered likely that the vegetation under application comprises, or is necessary for the maintenance of, a TEC.

Methodology DEC site visit 11/9/07
GIS Databases:
SAC Biodatasets accessed 03/09/07

(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 at variance to this Principle

The proposed clearing occurs within both the Swan Coastal Plain IBRA Region, where the area of vegetation remaining is 38.1% of pre-European extent, and the Jarrah Forest Region, which has 53.8% remaining (Shepherd 2006). The vegetation extent in the Shire of Murray is 54.3% (Shepherd et al. 2001) although there is a strong contrast between the portions of the Shire within the heavily vegetated Jarrah Forest Region and the extensively cleared landscape of the Swan Coastal Plain, of which there is approximately 15% of pre-European vegetation remaining.

The State Government is committed to the National Objectives and Targets for Biodiversity Conservation which includes a target that prevents the clearance of ecological communities with an extent below 30% of that present Pre-European settlement (Department of Natural Resources and Environment 2002; EPA 2000).

The vegetation under application on the Swan Coastal Plain is part of vegetation complexes that have below the minimum threshold of 30% pre-European extent remaining, and is located in a landscape that has been historically extensively cleared for agriculture. It is therefore considered that the proposed clearing of vegetation under application with less than 30% of pre-European representation remaining is less than 30% is at variance to this Principle.

A condition has been imposed on the permit requiring that the proponent offset the small extent remaining of some of the communities that will be cleared.

	Pre-European (ha)	Current (ha)	Remaining %	Conservation status****	% in reserves
Swan Coastal Plain	1,501,456	571,758	38.1**	Depleted	15.9
Jarrah Forest	4,506,674	2,426,079	53.8**	Least concern	39.2
Shire of Murray	181,526	98,552	54.3*	Least concern	
Shire of Murray (Swan Coastal Plain)					
	75,400	12,000	~15	Vulnerable	

Hedde vegetation complexes					
Bassendean Complex Central and South					
	87,477	23,624	27.0	Vulnerable	0.7
Cannington Complex	16,661	1,659	10.0	Vulnerable	5.3
Guildford Complex	92,497	4,662	5.0	Endangered	0.2
Herdsmen Complex	8,309	2,875	34.6	Depleted	11.5
Southern River Complex	57,979	11,501	19.8	Vulnerable	1.5
Swan Complex	15,783	2,454	15.6	Vulnerable	0.0
Vasse Complex	11,190	3,287	29.4	Vulnerable	11.0
Mattiske vegetation complexes				#	
Dwellingup (D1)	2,082,806	1,936,288	93	Least concern	
Murray 1 (My1)	686,104	585,544	85.3	Least concern	
Yarragil (Yg1)	800,603	703,654	87.9	Least concern	
			**		
Beard vegetation associations					
3	2,661,514	1,863,982	70.0	Least Concern	58.3
4	1,054,316	245,361	23.3	Vulnerable	6.3
999	115,712	15,161	13.1	Vulnerable	2.5
1000	99,841	25,683	25.7	Vulnerable	7.3

* (Shepherd et al. 2001)

** (Shepherd 2006)

*** (EPA, 2006)

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

(CALM 1998)

Methodology DEC site visit 11/9/07
 Department of Natural Resources and Environment (2002)
 EPA (2000)
 EPA (2006)
 Shepherd et al. (2001)
 Shepherd (2006)
 GIS Databases:
 Hedde Vegetation Complexes - DEP 21/06/95
 Mattiske Vegetation - CALM 24/3/98
 NLWRA, Current Extent of Native Vegetation - DA 30/01/01
 Pre-European Vegetation - DA 01/01_1

(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

There are numerous wetlands within the local area (5km radius of the applied areas), with the majority of the areas under application being located within mapped multiple use wetlands, with sections of Old Bunbury Road, Dunkerton Road and Lakelands Road being located within Conservation Category Wetlands (CCW).

The following watercourses are dissected by roads under application:

- South Dandalup River - dissected by Del Park Road;
- Conjurunup Creek - dissected by Del Park Road;
- Coolup Drain - dissected by Old Bunbury Road;
- Coolup South Main Drain - dissected by Old Bunbury Road;
- Tate Gully - dissected by Paterson Road.

A portion of the vegetation under application includes *Melaleuca raphiophylla*, *Eucalyptus rudis* and sedge species, all of which are species generally found in association with wetlands and watercourses.

Given that the majority of the vegetation under application is associated with watercourses or wetlands and includes wetland dependent vegetation, it is considered that the proposed clearing is at variance to this Principle.

To mitigate any long term loss of vegetation associated with watercourses and wetlands an offset condition has been imposed to ensure that the impact of this clearing is directly offset.

Methodology DEC site visit 11/9/07
GIS Databases:
Geomorphic Wetlands (Mgt Categories), Swan Coastal Plain - DEC
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 is not likely to be at variance to this Principle

The majority of the area under application is located on the Bassendean Dune System with soils comprising a mixture of pale deep sand, semi-wet soil and wet soil. These soils generally have a high risk of wind erosion and phosphorus export, with some areas being associated with a high risk of water logging (State of Western Australia 2005).

A large portion of the area under application is also located on the Pinjarra System with semi-wet soils, grey deep sandy duplexes, brown loamy earths, pale sands and clays which generally have a high risk of water logging and phosphorus export (State of Western Australia 2005).

In addition, a small portion of the area under application is located within the Darling Plateau system, which comprises duplex sandy gravels, loamy gravels, shallow and deep gravels, deep sands and wet and semi-wet soils; and the Murray Valley system which comprises red loamy earths, shallow duplexes and rock outcrop, both of which have a high risk of water erosion and phosphorus export (State of Western Australia 2005).

The areas under application have a low risk of salinity, with the exception of some portions on Greenlands Road, Pinjarra Road and Old Bunbury Road that are associated with drainage lines and wetlands and have a high risk of salinity.

Given that the proposed clearing is limited to 4.325 hectares of vegetation over 73km of road and drain reserves and it is not considered likely that the proposal would result in wind erosion, salinity, water logging or phosphorus export. The main land degradation risk associated with the proposed clearing is considered to be water erosion on the gravelly soils to the east of the Swan Coastal Plain, however given that the vegetation under application on these roads is limited to isolated trees it is not considered likely that the proposed clearing would result in water erosion. The proposed clearing is therefore not considered likely to be at variance to this Principle.

Methodology State of Western Australia (2005)
GIS Databases:
Salinity Risk LM 25m - DOLA 00

(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

There are numerous conservation reserves, being DEC managed lands, within 5km of the areas under application, including Goegrup Lake Nature Reserve, Unnamed (41184) Nature Reserve, Unnamed (35283) Nature Reserve Nine Mile Lake Nature Reserve.

Sections of Shenton Road, Dunkerton Road and Mears Road are adjacent to Unnamed (35283) Nature Reserve; a section of Dunkerton Road is adjacent to Goegrup Lake Nature Reserve; and a portion of Pinjarra Road is adjacent to Unnamed (41184) Nature Reserve. In addition, a portion of Old Bunbury Road is located approximately 500m southeast of Nine Mile Lake Nature Reserve. Although the areas under application are thin and linear in nature these road reserves may provide corridors for fauna movement between isolated Nature Reserves such as Nile Mile Lake Nature Reserve.

The vegetation under application that is directly adjacent to the Nature Reserves may provide buffer to the actual reserves and limit edge effects such as weeds. Weed species or dieback may be spread or introduced into areas adjacent to the road reserves 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 reserves adjacent to the applied areas on Hampton Road, Pinjarra Road, Dunkerton Road and Shenton Road it is considered that the proposal may be at variance to this Principle.

To prevent conservation reserves adjacent to the areas under application from being indirectly impacted by the clearing, conditions will be placed on the permit to ensure wash down of vehicles and to ensure construction material is weed and dieback free.

Methodology DEC site visit 11/9/07
GIS Databases:
CALM Managed Lands and Waters - CALM 1/07/05

(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

There are a number of watercourses in the local area, with the roads under application dissecting Dandalup River, Conjurunup Creek, Coolup Drain, Coolup South Main Drain and Tate Gully. Areas associated with these watercourses have a high risk of salinity, however the proposed clearing is not likely to regionally alter groundwater levels and have a significant affect on salinity within these watercourses within the Shire.

Portions of the area under application are located within a Priority 1 and a Priority 2 Public Drinking Water Source Area (PDWSA). Priority 1 PDWSAs are managed to ensure that there is no degradation of the drinking water source and Priority 2 PDWSAs are managed to ensure that there is no increased risk of water source contamination/ pollution (Department of Water 2004). Given that the proposed clearing is for road construction and maintenance and drain maintenance, and is limited to thin linear sections on the roadside, it is not considered likely to cause deterioration in groundwater quality through salinity or acid sulphate soils.

Due to the sandy soils within the majority of the area under application and the high infiltration rates associated with these soils, the proposed clearing in these areas is not considered likely to result in water erosion. The gravely soils present within the areas under application in the Scarp; and areas on the Swan Coastal Plain associated with watercourses that have clay soils have a high risk of water erosion. Given the vegetation under application in these areas is limited to individual trees it is therefore not considered likely that the proposed clearing would result in water erosion causing deterioration in surface water quality.

Methodology Department of Water (2004)
GIS Databases:
Acid Sulphate Soil Risk Map, SCP - DOE 04/11/04
Hydrography, linear (hierarchy)
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

Flooding impacts are not likely to occur as a result of the proposed clearing due to the low density of the applied vegetation in sections over a 73 km total length of road. The proposed clearing is contained within existing road reserves and there are numerous wetlands and watercourses within close proximity to the areas under application.

Given that the area under application is distributed over a long, thin area of road reserve, it is not considered likely that the proposed clearing would have an impact on peak flood height or duration.

Methodology DEC site visit 11/9/07
GIS Databases:
Hydrography, linear (hierarchy) - DOW
Topographic Contours, Statewide - DOLA 12/09/02

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

Comments

The areas under application are located within a Native Title Claim area. The applied area is contained within existing road reserves and drainage reserves that are managed by, or vested in the Shire of Murray. Therefore the clearing is considered to be a secondary approval and not a future act under the Native Title Act 1993.

The Shire of Murray will use their powers delegated under the Local Government Act to construct Greenlands Road and drain in the adjacent property and therefore permission does not need to be obtained from the landowners.

There are several Aboriginal Sites of Significance listed within the areas under application and advice will be provided to the Shire of Murray in the covering letter in regards to contacting the relevant parties.

The Peel Harvey Catchment Council advise that the vegetation on Readhead Road demarcated by the DRF markers was part of revegetation works by local groups. The DRF markers were placed to protect the revegetation and the locally significant sedge species during a control burn of the road side (Peel Harvey Catchment Council 2007). The PHCC recommends that the Shire of Murray liaise with the local groups prior to undertaking clearing works in this area. The Shire of Murray has committed to consulting with these groups.

Submission received expressing concern about the clearing on Readhead Road due to the revegetation and the presence of locally significant sedge species. Recommendations are made that if the species are to be affected by road maintenance activities then the sedge species should be translocated to another location. This submission has been addressed in the Principles and through conditions placed on the permit.

Methodology Peel Harvey Catchment Council (2007)
GIS Databases:
Aboriginal Sites of Significance - DIA
Native Title Claims - DIA

4. Assessor's comments

Purpose	Method	Applied area (ha)/ trees	Comment
Road construction o maintenance	Cutting	4.325	The assessable criteria have been addressed and the proposed clearing is at variance to Principles e and f, and may be at variance to Principles a, b, c and h.

5. References

- DEC (2006) Threatened Species Branch. Advice for land clearing application to Assessing Officer, Native Vegetation Assessment Branch, Department of Environment and Conservation (DEC), received 24/9/07. Department of Environment and Conservation, Western Australia. DEC TRIM ref. DOC34772
- 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 (2006) 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.
- 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.
- 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.
- Peel Harvey Catchment Council (2007) Submission regarding Readhead Road. DEC TRIM ref. DOC34387 and DOC34841.
- Shepherd (2006) Adapted from: Shepherd, D.P., Beeston, G.R., and Hopkins, A.J.M. (2001), Native Vegetation in Western Australia. Technical Report 249. Department of Agriculture Western Australia, South Perth. Includes subsequent updates for 2006 from Vegetation Extent dataset ANZWA1050000124.
- 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 11/9/2007, Department of Environment and Conservation (DEC), Western Australia. TRIM ref DOC33643.
- Western Australian Herbarium (1998-). FloraBase - The Western Australian Flora. Department of Environment and Conservation. <http://florabase.calm.wa.gov.au/> Accessed on 14 September 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)