



1. Application details

1.1. Permit application details

Permit application No.: 828/1
Permit type: Area Permit

1.2. Proponent details

Proponent's name: Commissioner of Main Roads, WA

1.3. Property details

Property: ROAD RESERVE (RAVENSTHORPE 6346)
Local Government Area: Shire Of Ravensthorpe
Colloquial name: SOUTH COAST HIGHWAY ROAD RESERVE SLK 332.54 - 334.52 and SLK 310.88 - 312.74

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
2.71		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 352 - Medium Woodland; Yorkgum and Beard Vegetation Association 47 - Shrublands; tallerack mallee-heath (Hopkins et al., 2001; Shepherd et al., 2001).	<p>A botanical survey completed as part of this application provides a localised and comprehensive description of the vegetation to be cleared.</p> <p>Passing Lane 1: The previously burnt vegetation was a mallee-heath community (Community A) and regrowth includes many species. The upper slope at the eastern end of the passing lane is an open mallee and heath community (Community B), including Eucalyptus phenax and E. austrina (Craig, 2004).</p> <p>Passing Lane 2: Mallee heath in shallow sands over laterite characterised by Lambertia inermis and Banksia baueri except on the eastern end where the deeper sand supports Banksia speciosa and Hakea obliqua subsp. parviflora. The passing lane traverses a small ridge and westward of this ridge, vegetation is mid-dense with a high proportion of Cyperaceae. East of the ridge the vegetation is extremely dense and particularly diverse in the number of species present (Craig, 2004).</p>	Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery 1994).	<p>Passing Lane 1: In 2003 a fire burnt both road reserves. Native vegetation is recovering well. Within the northern road reserve an 8-10 m wide cleared corridor exists. The vegetation is mainly in good condition with some weed invasion (Craig, 2004). The area to be cleared is 1.44 ha most of which is in good condition (GHD, 2005).</p> <p>Passing Lane 2: Mostly in excellent condition with a few weeds penetrating the thick scrub. Many of the large Banksia speciosa shrubs are dying in the northern road reserve, the cause of this is unknown (Craig, 2004). The area to be cleared is 1.27 ha most of which is in excellent to pristine condition (GHD, 2005).</p> <p>The rating of Very Good has been assigned as an overall summary of the vegetation condition at both sites.</p> <p>Findings from the flora survey suggest that ideally the passing lanes would utilise the southern road reserve for Passing Lane 1 and the northern road reserve for Passing Lane 2 (Craig, 2004). The opposite of this has been implemented and the justification for this is engineering and safety requirements (GHD, 2005).</p>

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**
Based on the botanical survey (Craig, 2004), fauna corridor value assessment (Sanders, 2005) and a site visit (DoE TRIM ref AD246) it is considered that Passing Lanes 1 and 2 contain a high level of biological diversity. Removal of vegetation in these areas is unlikely to be significant for the Bioregion given the small area (2.71 ha) concerned.
On a localised level, impacts on Biodiversity through removal of vegetation are likely to be reduced for Passing Lane 1 given the large area of similarly vegetated adjacent Unallocated Crown Land (UCL) to the north. For Passing Lane 2 removal of vegetation may have a significant effect on a local level given the narrow width of the road reserve and the cleared nature of the adjacent agricultural land. However, given the small area (1.27 ha over a distance of 200m) it is likely this loss can be offset through supplementary planting at a ratio greater than 1:1 in degraded road reserves close to the site. It is believed that the replanting of a degraded road reserve will ensure that this project is not likely to be at variance with this Clearing Principle.
- Methodology** Craig (2004), Sanders (2005), Site Visit (DoE TRIM ref AD246)
GIS Database:
-Ravensthorpe 1.4m Orthomosaic - DLI 02

(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**
CALM advice suggests that 8 Declared and 9 Priority Listed fauna species occur within 10km of the areas under application, with 6 of these populations within 1.5km of the notified area. It is possible that the identified species may utilise the habitat available within the notified area as a corridor to access other areas, however it is inconclusive as to whether the habitat could be considered to be 'significant' in a local context (CALM, 2005).

A fauna corridor value assessment was completed for the South Coast Highway (Ravensthorpe East) area by Angela Sanders, Consultant Zoologist (2005), her findings were:
Passing Lane 1 habitat consists of mallee over heath varying from good to degraded in condition. For this project area, proposed works are likely to have minimal impact on the corridor value for fauna as the roadside vegetation is contiguous with a much larger area of native vegetation in good condition. Impacts on threatened species are expected to be negligible. For Passing Lane 2 habitat comprises a diverse tall heath/shrubland and represents the most significant fauna corridor of the two sites assessed. The corridor here is narrow and would provide important food and shelter for many fauna species in an otherwise mostly cleared landscape. A flock of rare Carnaby's Cockatoo's were observed feeding on Hakea on the road verge of this site. Road widening in this area will impact on the corridor and consequently will reduce the inherent resources currently available for those species using it. To ameliorate the loss of habitat it was recommended that, if possible, supplementary planting of vegetation nearby, especially of the Cockatoo's food sources, be carried out (Sanders, 2005).

During botanical surveys of the sites Dr Craig opportunistically noted all fauna taxa evident. While a number of species are listed in her reports none of them are Specially Protected or Priority Listed taxa (Craig, 2004).

GHD noted that given the level of disturbance and lack of suitable habitat within the project area of Passing Lane 1 and the remaining sufficient habitat in Passing Lane 2 that it is unlikely that any of the listed threatened species would be adversely impacted by the proposed roadworks (GHD, 2005).

Control of weeds and dieback within the project areas as outlined in Main Roads, WA's Environmental Specifications (TRIM ref AI871) will be carried out to reduce any further impact on the remaining habitat.

Given the above information and considering that for Passing Lane 2 only 5m (at most) of a road reserve up to 40m wide will be removed it is considered that any adverse impacts resulting from the proposed roadworks could be ameliorated through supplement planting in degraded road reserves close to the project area. Therefore, this proposal is unlikely to be at variance to this Principle if offset planting is made a condition of the permit.
- Methodology** Craig (2004), GHD (2005), Sanders (2005), CALM (2005), Main Roads, WA (TRIM ref AI871)

(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**
The Department of Conservation and Land Management (CALM) advice states that 5 Declared Rare Flora (DRF) and 68 Priority flora species have been recorded within a 10km radius of the notified area. It is possible that the habitat within the notified area supports populations of three Priority flora species known to occur within 500m of the notified area these include *Adenanthos glabrescens* subsp. *exasperatus* (P3), *Acacia pinguiculosa* subsp. *pinguiculosa* (P4) and *Eucalyptus x erythrandra* (P4). CALM records also show a significant number of Declared Rare and Priority flora species have been recorded within the local area (CALM, 2005).

More specific information was provided through a botanical survey carried out by Dr Craig at both sites and while no Declared Rare Flora was found, a number of Priority species were, and are listed below:

Passing Lane 1

-Acacia ophiolithica (P3) well-represented in the region with two small populations found in the proposed area (Craig, 2004).

Passing Lane 2

-Acacia aemula subsp. aemula (P4) numerous plants found, principally in disturbed spur drains or embankment adjacent to the highway.

-Acacia moirii subsp. dasycarpa (P4) numerous plants found, principally in disturbed spur drains or embankment adjacent to the highway (Craig, 2004).

A discussion between the Environmental Consultants (GHD) and Mr Malcolm Grant from CALM's Ravensthorpe office reported that CALM has no conditions to impose on these projects, in regards to flora (GHD, 2005). A telephone conversation between Mr Grant and an officer from the Department of Environment confirmed this.

Therefore while priority flora was found at each site during the botanical surveys, as CALM has no objections in light of this knowledge and considering that no DRF was found, it is unlikely that the granting of this permit will have a significantly impact on the continued in situ existence of significant habitat for Priority flora species and as such this proposal is unlikely to be at variance.

Methodology GHD (2005), Craig (2004), CALM (2005)
GIS Database:
-Declared Rare and Priority Flora List - CALM 01/07/05

(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

Four occurrences of the Threatened Ecological Community (TEC) "Bandalup Hill - Eucalyptus purpurata woodlands of Bandalup Hill" are listed within the local area, the closest is 6.1km from the notified area and there is insufficient information to conclude if TEC's would occur on the site of the proposed clearing (CALM, 2005). However, there are no listed TEC's at either of the proposed sites and none were identified within the project areas (GHD, 2005) during site visits. In addition, the Vegetation Communities surveyed are well-represented in the region (Craig, 2004).

Methodology GHD (2005), Craig (2004), CALM (2005)
GIS Database:
-Threatened Ecological Communities - CALM 12/04/05

(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

The 'Best Fit' Beard Vegetation Classifications as identified by the consultants GHD (2005) from information in the botanical surveys (Craig, 2004) are outlined below and have been used instead of the classifications listed under the items of interest, as they are likely to be a better reflection of the actual representation of vegetation at the sites.

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. EPA's Position Statement No. 2 (EPA, 2000) also identified a 30% threshold level for vegetation types, beyond which species extinction is believed to occur at an exponential rate. Any further clearing may have irreversible consequences for the conservation of biodiversity and is, therefore, not supported.

The area under application has above 30% representation for the IBRA Bioregion (Esperance), for the Shire (Ravensthorpe) and for the Beard Vegetation Association 986 (Shrublands; Mallee Heath) in Passing Lane 1 (Shepherd et al., 2001; Hopkins et al., 2001). However, Beard Vegetation Associations 4801 (Shrublands; Heath with scattered Nuytsia floribunda on sand plain) at Passing Lane 2 has only 14.5% remaining which classifies it as 'vulnerable' in terms of conservation status (Department of Natural Resources and Environment, 2002). Of the vegetation remaining for 4801, 21.8% is in reserve which is above the benchmark of 15% representation set for conservation reserves (JANIS, 1997). Vegetation Associations 986 has over 90% in reserve (JANIS, 1997).

The loss of vegetation at Passing Lane 2 is unlikely to be significant given it is relatively small (1.27 ha) and will be offset by replanting in road reserves in the area.

Therefore, the clearing of native vegetation for these necessary roadworks is considered unlikely to be at variance to this Clearing Principle provided offset planting is a condition of the permit.

Methodology Craig (2004), GHD (2005), Department of Natural Resources and Environment (2002), Hopkins et al. (2001), Shepherd et al. (2001), EPA (2000), AGPS (2001), JANIS (1997)

(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

No wetlands are located at or in the vicinity of any of the project areas. The Jerdicutup River flows ~6km south of Passing Lane 1 and is the eventual destination of the drainage lines in that area.

The project area is traversed by a small number of drainage lines. Management measures outlined by the Environmental Consultants (GHD) to reduce impacts on these watercourses include the maintenance of existing surface drainage patterns (GHD, 2005). Main Roads, WA confirmed that they do not intend to divert or rechannel any natural watercourses for these works (TRIM ref AI870).

Existing culverts will be extended or replaced, rock pitched scour protection will be used to reduce erosion (Main Roads WA, TRIM ref AI870). Removal of the small amount of vegetation associated with these works is unlikely to be significant.

Methodology GHD (2005), Main Roads, WA (TRIM ref AI870)
GIS Database:
-Hydrography, linear - 01/02/04

(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 Environmental Consultants (GHD) contacted the Department of Agriculture, Ravensthorpe office, about these projects and DAWA's only concerns were reported to be the management of any Declared Plants (weeds) observed within the project areas, through the cleaning down of any machinery prior to relocation and through soil not being removed from the sites (GHD, 2005). The Declared Plant Saffron thistle was observed at Passing Lane 1 and a number of other weed species were noted at all sites (Craig, 2004). The control of weeds during works is covered in Main Roads, WA's Environmental Specifications for this contract and includes cleandown procedures and topsoil management (TRIM ref AI871). With longer term weed management conducted during the annual herbicide and weed management program carried out by Main Roads Term Network Contractor (GHD, 2005), it is considered that this factor is covered sufficiently.

Dieback was suspected at Passing Lane 2 (Craig, 2004) and procedures to control dieback are also covered in the Main Roads, WA's Specifications (TRIM ref AI871) and also outlined in the Environmental Management Plans (GHD, 2005). CALM Ravensthorpe also indicated they require vehicle hygiene practices to be put in place (GHD, 2005).

To minimise soil erosion Main Roads will design and construct their culvert extensions with appropriate erosion control measures to reduce potential for scour (GHD, 2005) through use of 'rock pitched scour protection' (Main Roads, WA TRIM ref AI870) and silt traps will be used during construction (TRIM ref AI871).

The area proposed for clearing is small and very narrow and will be managed to avoid erosion during construction. There is unlikely to be land degradation issues associated with this activity due to the scale and ongoing management commitments. Drainage controls will be implemented to allow for appropriate shedding of water and to prevent changes to surface drainage.

Methodology GHD (2005), Main Roads, WA (TRIM ref AI871 and AI870), Craig (2004)

(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 closest CALM reserve is 4.2km from the notified area and it is unlikely this proposal will impact on the reserve in the long term, due to this distance. However, clearing for Passing Lane 2 may impact on the continuity of remnant vegetation as a corridor for wildlife movement between large areas of bushland (reiterated by the Roadside Conservation Committee). It may also affect the buffering value of adjacent Crown Lands or those in close proximity (CALM, 2005).

It is considered that given the small width of vegetation to be removed (~5m) from the southern road reserve for Passing Lane 2 and the size of the Unallocated Crown Land north of Passing Lane 1, the proposal is unlikely to be at variance to this Principle if the clearing is ameliorated through offset planting in a nearby road reserve.

Methodology CALM (2005)
GIS Database:
-CALM Managed Lands and Waters - CALM 01/07/05

(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 at variance to this Principle

The proposed clearing is not within a proclaimed, gazetted or declared area under the Rights in Water and Irrigation Act 1914. Immediately north of the road reserves the Kondinin-Ravensthorpe Groundwater Area exists, however this area has no plan or legal requirements connected to it.

Clearing of vegetation and related works will be carried out in accordance with Main Roads, WA's Environmental Specifications 204 (DoE TRIM ref AI871) which include the use of silt traps and sedimentation prevention procedures.

This together with the maintenance of all existing drainage lines and considering the small scale of the proposed clearing, it is unlikely that significant degradation of the water quality will result from the granting of this permit.

Methodology Main Roads, WA (TRIM ref AI870)

GIS Database:

-Public Drinking Water Source Area (PDWSA)s - DOE 09/08/05

-Hydrography linear - DOE 1/2/04

-RIWI Act, Groundwater Areas- WRC 06/06/00

(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 at variance to this Principle

The area of vegetation to be removed is small and will have no impact on peak flood height or duration. Additionally, existing drainage lines will be maintained in order to maintain existing surface water drainage patterns (GHD, 2005; Main Roads, WA, TRIM ref AI870).

Methodology GHD (2005), Main Roads, WA (TRIM ref AI870)

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

Comments

No objections have been raised for this proposed clearing activity. Native Title claims cover the notified areas. However, as all of the areas will be managed by Main Roads, WA at the time of clearing, Native Title will be considered under their legislation (Main Roads Act 1930). Aboriginal sites and artefacts will be managed as part of their Environmental Specifications (TRIM ref AI871) and Main Roads will seek any approvals required under the Aboriginal Heritage Act (1972) (GHD, 2005). Therefore the clearing as proposed in the area under application is not considered to be a future act that impacts Native Title.

Methodology GHD (2005), Mains Roads, WA (TRIM ref AI871)

GIS Database:

-Native Title Claims-DLI 07/11/05

4. Assessor's recommendations

Purpose	Method	Applied area (ha)/ trees	Decision	Comment / recommendation
Road construction or maintenance	Mechanical Removal	2.71	Grant	The proposal has been assessed against the Clearing Principles and it is recommended that the Clearing Permit be granted as the proposal is: - not at variance with Principle i and j - not likely to be at variance with Principles a, b, c, d, e, f, g, and h. The applicant has demonstrated sensitive work practices as outlined in their Environment Specification 204 and Clearing Specification 301 attached as contractual conditions to these works, particularly in relation to Principles f and g. Offset revegetation is an essential condition to this permit in order not to be at variance with Principles a, b, e and h.

5. References

- AGPS (2001) The national objective and targets for biodiversity conservation 2001-2005. Commonwealth of Australia, Canberra.
- CALM (2005) Land clearing proposal advice. Advice to A/Director General, Department of Environment (DoE). Department of Conservation and Land Management, Western Australia. DoE TRIM ref IN24588.
- Craig, G.F. Environmental Consultant (2004) South Coast Highway Botanical Survey. Report prepared for GHD Pty Ltd.
- 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.
- GHD Pty Ltd (GHD) (2005) Environmental Impact Assessment and Environmental Management Plan, South Coast Highway

- Passing Lanes. Prepared for Main Roads, 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.
- 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, BJ (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.
- Sanders, A. Consultant Zoologist (2005) Fauna Corridor Value Assessment South Coast Highway (Ravensthorpe East) Road Improvements. Report prepared for Main Roads, 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.

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)