



## 1. Application details

### 1.1. Permit application details

Permit application No.: 2636/1  
Permit type: Purpose Permit

### 1.2. Proponent details

Proponent's name: Shire of Northam

### 1.3. Property details

Property: ROAD RESERVE ( CLACKLINE 6564)  
ROAD RESERVE ( CLACKLINE 6564)  
ROAD RESERVE ( CLACKLINE 6564)  
ROAD RESERVE ( CLACKLINE 6564)  
ROAD RESERVE ( CLACKLINE 6564)  
ROAD RESERVE ( BURLONG 6401)  
ROAD RESERVE ( CLACKLINE 6564)  
Local Government Area: Shire Of Northam  
Colloquial name:

### 1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
0.892		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 4: Medium woodland; marri & wandoo (Shepherd 2006).	The proposal is to clear up to 0.892ha of native vegetation for the widening of the Clackline-Toodyay, Clackline. The area under application can be separated into three project areas based on the amount of road widening required.	Completely Degraded: No longer intact; completely/almost completely without native species (Keighery 1994)	The vegetation condition and clearing description was obtained from a site inspection undertaken 03/09/2008 (DEC 2008).
Heddle Vegetation Complex - Michibin: No description available.			
Mattiske Vegetation Complex - Michibin: Open woodland of Eucalyptus wandoo over Acacia acuminata with some Eucalyptus loxophleba on valley slopes, with low woodland of Allocasuarina huegeliana on or near shallow granite outcrops in arid and perarid zones (Mattiske Consulting 1998).	Area 1 occurs from the junction of Eadine Road and extends north 345m. The proposal is to widen the road 1m in to vegetation from the current gravel edge, on both sides of the road.  The vegetation under application within this area comprised a predominantly Acacia sp. thicket overstorey, with sparse Allocasuarina sp. and Eucalyptus wandoo (Wandoo). The understorey comprised introduced pasture grass and weed species. The vegetation within this area was considered to be in completely degraded condition.  Area 2 extends 705m north from the end of Area 1. The	Completely Degraded: No longer intact;	

proposal is to widen the road 4m in to vegetation on the western side and 2m into vegetation on the eastern side of the road, from the existing gravel edges.

completely/almost completely without native species (Keighery 1994)

The vegetation under application within this area comprised a very sparse Eucalyptus sp. (inc. Wandoo) overstorey, with Eucalyptus rudis (Flooded Gum) predominant on the western side of the road within the floodplain area. The understorey comprised an introduced pasture grass and annual weed understorey. The vegetation within this area was considered to be in a completely degraded condition.

Area 3 extends 2000m north from the end of Area 2. The proposal is to widen the road 1m in to vegetation from the current gravel edge, on both sides of the road.

Completely Degraded: No longer intact; completely/almost completely without native species (Keighery 1994)

The vegetation within Area 3 ranges in condition from completely degraded to very good. However, as the majority of the vegetation within this area is in a completely degraded condition this overall condition has been used for this Area.

The majority of vegetation within the proposal area on the western side of the road comprised a predominantly open Eucalyptus sp. and Allocasuarina sp. overstorey, with a scattered native and weed species understorey. The majority of vegetation within the proposal area on the eastern side of the road (~1200m length) comprised a sparse Eucalyptus sp. and Allocasuarina sp. overstorey with an introduced pasture grass understorey in a completely degraded condition.

However the middle section of this area (~800m length) comprised a dense and diverse native shrubland with a Eucalyptus sp. and Allocasuarina sp. overstorey. Species observed within this area included, but were not limited to, Acacia pulchella, Bossiaea eriocarpa, Kennedia prostrata, Thomasia sp., Hakea spp., Gastrolobium sp. and Pterostylis sp. (orchid). Overall the vegetation within this area was considered to be in very good condition.



### 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 proposal is to clear up to 0.892ha of native vegetation over both sides of a regional road (~3km long) for road widening.

The majority of the vegetation under application comprises a scattered Eucalyptus-Sheoak (*Allocasuarina* sp.) or Acacia thicket overstorey, with an introduced pasture grass and weed understorey (DEC 2008), and is considered to be in a completely degraded condition (DEC 2008). A small portion of the vegetation under application on the eastern side of the road within Area 3, and covering a length of ~800m comprises a dense and diverse shrubland in very good condition (DEC 2008).

Whilst a portion of the vegetation under application is considered to comprise a diverse floral community, given that this vegetation is located within an existing road reserve it is considered likely that the full complement of species for this community may not be present due to edge effects and disturbance. In addition, given the relatively small amount of vegetation in very good condition (DEC 2008), the proposal area is not considered likely to comprise suitable habitat for native fauna, resulting in a low level of fauna diversity.

Given the overall completely degraded condition of the vegetation under application, low floral diversity and absence of suitable habitat for local native fauna, the vegetation under application is not considered likely to comprise a high level of biological diversity.

**Methodology**      Reference:  
- DEC (2008)

#### (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 proposal is to clear up to 0.892ha of native vegetation on both sides of a regional road (~3km long) for road widening. The majority of the vegetation under application comprises a scattered Eucalyptus-Sheoak (*Allocasuarina* sp.) or Acacia thicket overstorey, with an introduced pasture grass and weed understorey (DEC 2008), and is considered to be in a completely degraded condition (DEC 2008). A small portion of the vegetation under application on the eastern side of the road, and covering a length of ~800m comprises a dense and diverse shrubland in very good condition (DEC 2008).

Four species of conservation significance have been recorded within the local area (5km), being Malleefowl (Vulnerable), Chuditch (Vulnerable), Forest Red-tailed Black-Cockatoo (Vulnerable) and Water Rat (priority 4).

The vegetation under application is not considered to comprise suitable habitat for these species due to the absence of an abundant leaf layer and lack of suitable foraging and nesting habitat (such as tree hollows).

In addition, the proposal is to clear up to 0.892ha of native vegetation over two long, narrow corridors ~3km long.

Therefore, given the relatively small area proposed to be cleared (~0.892ha) and overall completely degraded condition of the vegetation proposed to be cleared (DEC 2008), the area of vegetation under application is not considered likely to comprise significant fauna habitat on a local or regional scale.

**Methodology**      References:  
- DEC (2007)  
- DEC (2008)  
GIS Databases:  
- DEC SAC Bio Datasets, Date accessed 08/09/2008  
- Northam 50cm Orthomosaic - Landgate 2006

#### (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**

One rare flora species, *Acacia aphylla*, is known to occur within the local area (5km radius). *Acacia aphylla* is known to occur on and around granite outcrops, often in rock crevices (Brown et al. 1998), with the closest known occurrence being ~1km from the vegetation under application.

The area of vegetation under application is associated with chief soils of hard neutral red soils, to hard acidic yellow mottled soils and sandy acidic yellow mottled soils, which contain moderate to large amounts of ironstone gravels in their surface horizons (Northcote et al. 1960-68).



Therefore, given that the geological habitat of the vegetation under application differs from that required for *Acacia aphylla*, the vegetation under application is not considered likely to comprise populations of this rare flora species.

- Methodology**    **References:**
- Brown et al. (1998)
  - Northcote et al. (1960-68)
- GIS Databases:**
- DEC SAC Bio Datasets, Date accessed 09/09/2008
  - Soils, Statewide

**(d) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of a threatened ecological community.**

- Comments**    **Proposal is not likely to be at variance to this Principle**
- There are no known occurrences of Threatened Ecological Communities (TEC) within the local area (5km radius), with the closest known occurrence being Floristic Community Type 20b: Eastern *Banksia attenuata* and/or *Eucalyptus marginata* woodlands located ~44km from the area of vegetation under application.

The area under application predominantly comprises a scattered *Eucalyptus*-Sheoak (*Allocasuarina* sp.) or *Acacia* thicket overstorey, with an introduced pasture grass and weed understorey (DEC 2008), and is not considered to comprise a floral composition or structure representative of a TEC. In addition, Floristic Community Type 20b is known to occur within landforms on the Swan Coastal Plain, with the area under application being located on the Darling Range.

Given the distance to the closest known occurrence, and composition and structure of the vegetation under application and applied area's location within the Darling Range, the area proposed to be cleared is not considered likely to comprise the whole or a part of, or be necessary for the maintenance of a threatened ecological community.

- Methodology**    **References:**
- DEC (2008)
  - Gibson et al. (1994)
- GIS Database:**
- DEC SAC Bio Datasets, Date accessed 08/09/2008

**(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 vegetation under application is associated with Beard Vegetation Association 4 and Mattiske Michibin vegetation complex, which have 23.3% and 26.5% % pre-European vegetation extent remaining respectively (Hopkins et al. 2001, Mattiske Consulting 1998 and Shepherd 2006). The vegetation under application is also associated with Heddle Michibin vegetation complex.

The State Government is committed to the National Objectives and Targets for Biodiversity Conservation which includes a target that prevents a clearance of ecological communities with an extent below 30% of that present pre-European settlement (Commonwealth of Australia 2001).

Both Beard Vegetation Association 4 and Mattiske Michibin vegetation complex are below the State Government's 30% biodiversity target. However, the majority of the vegetation under application comprises a scattered *Eucalyptus*-Sheoak (*Allocasuarina* sp.) or *Acacia* thicket overstorey, with an introduced pasture grass and weed understorey (DEC 2008), and is considered to be in a completely degraded condition (DEC 2008). Only a small portion of the vegetation under application on the eastern side of the road in Area 3, and covering a length of ~800m comprises a dense and diverse shrubland in very good condition (DEC 2008). Therefore, the majority of the vegetation proposed to be cleared is not considered to represent the mapped Beard and Mattiske vegetation communities.

In addition, the proposal is to clear up to 0.892ha of native vegetation over two long, linear areas ~3km long. Given the relatively small area proposed to be cleared and predominantly completely degraded condition of the vegetation under application (DEC 2008), the vegetation under application is not considered to be significant as a remnant of native vegetation.

	Pre-European (ha)	Current extent (ha)	Remaining (%)	% In reserves/ DEC managed land
IBRA Bioregions**:				
Jarrah Forest	4,506,674	2,426,079	53.8	
Shire of Northam*	141,410	31,229	22.1	

Beard Vegetation Association**:				
- 4	1,054,316	245,361	23.3	26.3
Mattiske Vegetation Complex***:				
- Michibin	1,345,524	356,512	26.5	

Hedde Vegetation Complex:  
- Michibin (no information available)

\* (Shepherd et al. 2001)

\*\* (Shepherd 2006)

\*\*\* (Mattiske Consulting 1998)

Methodology	References:
	- Commonwealth of Australia (2001)
	- DEC (2008)
	- Hopkins et al (2001)
	- Mattiske Consulting (1998)
	- Shepherd (2006)
	- Shepherd et al (2001)
	GIS Databases:
	- DEC SAC Bio Datasets, Date accessed 08/09/2008
	- Hedde Vegetation Complexes
	- Interim Biogeographic Regionalisation of Australia
	- Local Government Authorities
	- Mattiske Vegetation

**(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	<b>Proposal is at variance to this Principle</b> Clackline-Toodyay road intersects the Nanamullen Brook approximately 1km north of the Eadine Road junction, within Area 2.
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The area proposed to be cleared on the eastern side of the road within Area 2 is slightly elevated and comprises a sparse Eucalyptus sp. (inc. Wandoo) overstorey with an introduced pasture grass and weed understorey (DEC 2008). However, the vegetation under application within Area 2 on the western side of the road comprises a predominantly Eucalyptus rudis (Flooded Gum) overstorey with an introduced pasture grass and weed understorey (DEC 2008). The western proposal area within Area 2 is also low-lying, and appeared on site to be associated with a floodplain area (DEC 2008).

Whilst the condition of the vegetation within and adjacent to the Brook and floodplain is considered to be in an overall completely degraded condition (DEC 2008), given that the proposed clearing includes vegetation growing in and in association with a creekline (Brook) and floodplain area, the proposed clearing is considered to be at variance to this Principle.

Methodology	Reference:
	- DEC (2008)
	GIS Databases:
	- Hydrography, linear (hierarchy)
	- Northam 50cm Orthomosaic - Landgate 2006
	- Rivers
	- Road Centrelines

**(g) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.**

Comments	<b>Proposal is not likely to be at variance to this Principle</b> The proposal is to clear up to 0.892ha of native vegetation on both sides of a regional road (~3km long) for road widening. The majority of the vegetation under application comprises a scattered Eucalyptus-Sheoak (Allocasuarina sp.) or Acacia thicket overstorey, with an introduced pasture grass and weed understorey (DEC 2008), and is considered to be in a completely degraded condition (DEC 2008). A small portion of the vegetation under application on the eastern side of the road, and covering a length of ~800m comprises a dense and diverse shrubland in very good condition (DEC 2008).
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The southern half of the proposal area (Area 1, 2 and a portion of Area 3) is associated with a rolling to hilly landscape with some steep slopes and chief soils of hard neutral red soils (Northcote et al. (1960-68). The northern half of the proposal area (Area 3) is associated with low hilly to hilly terrain with chief soils of hard



acidic yellow mottled soils and sandy acidic yellow mottled soils, which contain moderate to large amounts of ironstone gravels in their surface horizons (Northcote et al. 1960-68).

The soils associated with the proposal area are known to have a moderate to high water erosion risk, due to the high resistance of the soils to structural breakdown by water and generally low infiltration of rainwater (Wells 1988).

However, overall the site has a level to very gentle gradient of only 1.6%, with the majority of the proposal area supporting sparse perennial vegetation cover (DEC 2008). In addition the proposal is to clear up to 0.892ha of native vegetation over two long, linear areas (~3km long), with the maximum clearing width at any one point being up to 4m within Area 2 (~705m long).

Given the relatively small area proposed to be cleared, overall sparse vegetation cover and level gradient across the proposal area, the proposed clearing is not considered likely to lead to appreciable land degradation.

**Methodology**    References:  
- DEC (2008)  
- Northcote et al. (1960-68)  
- Wells (1988)  
GIS Databases:  
- Soils, Statewide  
- Topographic Contours, Statewide

**(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 area of vegetation under application is located in close proximity to the Clackline and Bobakine Nature Reserves, which are located 200m west and 400m east of the area under application respectively. The vegetation under application is linked to the Clackline Nature Reserve through remnant vegetation on adjoining properties.  
  
Whilst the proposal area is linked to the Clackline Nature Reserve, the majority of the vegetation proposed to be cleared is considered to be in a completely degraded condition with a sparse overstorey and weed understorey (DEC 2008). Only a small portion of the vegetation under application within Area 3 (covering a length of ~800m) is considered to be in very good condition, with a diverse shrub layer (DEC 2008).  
  
Given the relatively small and long, linear nature of the clearing (0.892ha over two areas ~3km long), and overall completely degraded condition of the vegetation under application (DEC 2008), the proposed clearing is not considered likely to impact on the environmental values of any nearby conservation areas.

**Methodology**    Reference:  
- DEC (2008)  
GIS Databases:  
- CALM Managed Lands and Waters  
- Northam 50cm Orthomosaic - Landgate 2006

**(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 proposal is to clear up to 0.892ha of native vegetation over both sides of the Clackline-Toodyay Road (~3km long) for road widening. Clackline-Toodyay road intersects the Nanamullen Brook approximately 1km north of the Eadine Road junction within Area 2.  
  
The area proposed to be cleared within the western portion of Area 2 and adjacent to the Brook is a low-lying floodplain area, and comprises a Eucalyptus rudis overstorey and weed species understorey (DEC 2008). The remaining proposal area (Area 1-3) predominantly comprises a scattered Eucalyptus-Sheoak (Allocasuarina sp.) or Acacia thicket overstorey, with an introduced pasture grass and weed understorey (DEC 2008), and is considered to be in a completely degraded condition (DEC 2008).  
  
The soils within Area 2 are associated chief soils of hard neutral red soils (Northcote et al. (1960-68). These soils are generally known to have a moderate to high water erosion risk, due to the high resistance of the soils to structural breakdown by water and generally low infiltration of rainwater, which can also lead to sedimentation and turbidity of receiving surface water bodies.  
  
However, given the relatively small area proposed to be cleared (0.892ha over two areas ~3km long) and overall completely degraded condition of the vegetation proposed to be cleared (DEC 2008), the proposed clearing is not considered likely to cause the deterioration of surface or underground water.

- Methodology**    **References:**
- DEC (2008)
  - Northcote et al. (1960-68)
  - Wells (1988)
- GIS Databases:**
- Hydrography, linear (hierarchy)
  - Soils, Statewide
  - Topographic Contours, Statewide

**(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 proposal is to clear up to 0.892ha of native vegetation over both sides of the Clackline-Toodyay Road (~3km long) for road widening. The majority of the vegetation under application comprises a scattered Eucalyptus-Sheoak (*Allocasuarina* sp.) or Acacia thicket overstorey, with an introduced pasture grass and weed understorey (DEC 2008), and is considered to be in a completely degraded condition (DEC 2008).

The soils within the proposal area range from chief soils of hard neutral red soils, to hard acidic yellow mottled soils and sandy acidic yellow mottled soils, which contain moderate to large amounts of ironstone gravels in their surface horizons (Northcote et al. 1960-68). These soils are known to have a low infiltration of rainwater, and flooding risk.

Therefore, given the relatively small area proposed to be cleared (0.892ha over two areas ~3km long), overall completely degraded condition of the vegetation proposed to be cleared (DEC 2008) and low permeability of the soils on site, the proposed clearing is not considered likely to cause, or exacerbate, the incidence or intensity of flooding.

- Methodology**    **References:**
- DEC (2008)
  - Northcote et al. (1960-68)
- GIS Database:**
- Soils, Statewide

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

**Comments**

The proposal is to clear up to 0.892ha of native vegetation over two areas on either side of the Clackline-Toodyay Road (~3km long) for road widening, due to increased traffic and heavy vehicle use on this single carriageway road. The Shire of Northam advised that tree lopping will occur, where possible, to reduce the need to clear vegetation from the road reserve (DEC 2008).

There are no Aboriginal Sites of Significance within the proposal area.

There are no other DEC approvals required for this development.

- Methodology**    **Reference:**
- DEC (2008)
- GIS Database:**
- Aboriginal Sites of Significance

#### 4. Assessor's comments

**Comment**

The assessable criteria have been addressed and the clearing as proposed is at variance to Principle (f).

#### 5. References

- Brown A., Thomson-Dans C. and Marchant N. (1998). Western Australia's Threatened Flora, Department of Conservation and Land Management, Western Australia.
- Commonwealth of Australia (2001) National Targets and Objectives for Biodiversity Conservation 2001-2005, AGPS, Canberra.
- DEC (2007) Fauna Habitat Notes.xls February 2007. Department of Environment and Conservation, Western Australia.
- DEC (2008) Site Inspection Report for Clearing Permit Application CPS 2636/1, Clackline-Toodyay Road Reserve, Clackline. Site inspection undertaken 03/09/2008. Department of Environment and Conservation, Western Australia (TRIM Ref. DOC62252).
- Gibson N., Keighery B., Keighery G., Burbidge A. and Lyons M. (1994). A Floristic Survey of the Southern Swan Coastal Plain. Western Australian Department of Conservation and Land Management and the Western Australian Conservation Council.



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- 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, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.
- Mattiske, E.M. and Havel, J.J. (1998) Vegetation Complexes of the South-west Forest Region of Western Australia. Maps and report prepared as part of the Regional Forest Agreement, Western Australia for the Department of Conservation and Land Management and Environment Australia.
- Northcote, K. H. with Beckmann G G, Bettenay E., Churchward H. M., van Dijk D. C., Dimmock G. M., Hubble G. D., Isbell R. F., McArthur W. M., Murtha G. G., Nicolls K. D., Paton T. R., Thompson C. H., Webb A. A. and Wright M. J. (1960-68): 'Atlas of Australian Soils, Sheets 1 to 10, with explanatory data'. CSIRO and Melbourne University Press: Melbourne.
- Shepherd, D.P. (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.
- Wells, M. (1988) A Method of Assessing Water Erosion Risk in Land Capability Studies - Swan Coastal Plain & Darling Range. Resource Management Technical Report No. 73. Department of Agriculture, Western Australia. ISSN 0729 - 3135.

## 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)