



1. Application details

1.1. Permit application details

Permit application No.: 1994/1
 Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: Public Transport Authority

1.3. Property details

Property: LOT 21 ON PLAN 12469 (House No. 160 LUKIN RIDGEWOOD 6030)
 Local Government Area: City Of Wanneroo
 Colloquial name: Future Butler railway station.

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
3.5		Mechanical Removal	Stockpile

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
<p>Beard Vegetation Associations: 1948: Low woodland - banksia on limestone; 998: Medium Woodland; Tuart (Shepherd et al. 2001).</p> <p>Hedde Vegetation Complex: Cottesloe Central and South: Mosaic of woodland of E. gomphocephala and open forest of E. gomphocephala - E. marginata - E. calophylla; closed heath on the Limestone outcrops (Hedde et al. 1980).</p>	<p>The proposed clearing consists of 3.5ha of native vegetation, to be cleared to create a stock pile area for fill material excavated during the construction of the Clarkson to Brighton electric passenger railway alignment. The original application of 4.5ha was amended to 3.5ha to remove a 1ha area to the north which was identified as comprising a Threatened Ecological Community.</p> <p>The vegetation under application is considered to be in a degraded condition, with partial clearing, edge effects, rubbish dumping and severe weed invasion by aggressive species.</p> <p>The vegetation under application can be described as Banksia woodland, comprising Banksia menziesii, Eucalyptus todtiana, Allocasuarina fraseriana, Nuytsia floribunda, Dryandra sessilis, Xanthorrhoea preisii, Hakea ruscifolia, Hibbertia hypericoides, Acacia pulchella, Gompholobium tomentosum, Daviesia nudiflora and Conostylis candicans. Weeds observed within the area of vegetation under application include</p>	<p>Degraded: Structure severely disturbed; regeneration to good condition requires intensive management (Keighery 1994)</p>	<p>The description and condition of the vegetation under application was determined from the Site Inspection undertaken 4/09/2007 (TRIM Ref. DOC33175) and orthomosaics.</p>

Ehrharta calycina,
Pelargonium capitatum,
Carpobrotus edulis,
Euphorbia dendroides,
Lupinus cosentinii, Tripteris
clandestina and Brassica
tournefortii (Site Inspection
2007).

The vegetation under
application is located within
an area zoned for primary
regional roads, and is
surrounded to the west by
urban development and to
the east by Bush Forever
Site 383 (Neerabup
National Park, Lake
Nowergup Nature Reserve
and Adjacent Bushland,
Neerabup).

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 vegetation under application is described as Banksia woodland, comprising Banksia menziesii, Eucalyptus tottiana, Allocasuarina fraseriana, Nuytsia floribunda, Dryandra sessilis, Xanthorrhoea preisii, Hakea ruscifolia, Hibbertia hypericoides, Acacia pulchella, Gompholobium tomentosum, Daviesia nudiflora and Conostylis candidans (Site Inspection 2007). The vegetation under application is considered to be in a degraded condition, with the site subject to historic, and continuing disturbance from partial clearing, edge effects and rubbish dumping. Weed invasion by aggressive weed species is also evident (Site Inspection 2007).

Structure of the vegetation under application is significantly altered with reduced floristic diversity particularly at the middle and ground storey level and reduced vegetation density (Site Inspection 2007). The area thus presents poor quality habitat for fauna.

Given the degraded condition of the vegetation under application, low flora diversity and lack of suitable habitat for fauna is not considered likely to comprise a high level of biological diversity.

Methodology Reference:

- Site Inspection (2007) (TRIM Ref. DOC33175)
- GIS Databases:
 - Bushforever - MFP 07/01
 - Metropolitan Regional Scheme - DPI 07/10/05
 - Swan Coastal Plain North 20cm Orthomosaic - DLI06

(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**

Eight conservation significant, indigenous fauna species have been recorded within a 10 km radius of the vegetation under application, the closest being Quenda (Isodon obesulus subsp. fusciventer) (Priority 5) recorded within 500m of the site in the Neerabup National Park.

A site inspection (2007) revealed an altered, open vegetation structure with reduced floristic diversity in the middle and lower storeys. It is therefore considered unsuitable for ground dwelling fauna such as the Quenda. Trees within the area were not observed to support hollows suitable for hollow dependent fauna.

The vegetation under application is not considered to compromise suitable native fauna habitat given the high level of disturbance that has occurred. This view is supported by the condition of the vegetation observed during Site Inspection (2007).

Bush Forever site 383, located 370 m east of the area under application represents a significant area of habitat for fauna, including the Quenda and supports the same vegetation types and soils as the area under application.

Considering the condition of the vegetation under application and the proximity of significant habitat, being Bush Forever Site 383, clearing is unlikely to be at variance to this principle.

Methodology Reference:

- Site Inspection (2007) (TRIM Ref. DOC33175)
- GIS Databases:
 - Bushforever - MFP 07/01
 - Metropolitan Regional Scheme - DPI 07/10/05
 - SAC Bio datasets 30/08/2007
 - Swan Coastal Plain North 20cm Orthomosaic - DLI06

(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

Two Declared Rare Flora (DRF) species occur within a 10km radius of the vegetation under application, these include *Eucalyptus argutifolia* and *Marianthus paralius*. The closest DRF population is *Eucalyptus argutifolia*, located ~2.8km south west of the vegetation under application.

Eucalyptus argutifolia is known to occur on shallow sands on limestone ridges in association with *Melaleuca huegelii* and *Dryandra sessilis* (Brown et al. 1998), whilst *Marianthus paralius* is known to occur on white sands (Western Australian Herbarium 1998). Given the vegetation complexes, topography and soil type present on site (Site Inspection 2007) these species are not considered likely to occur within the area of vegetation under application.

Several Priority Flora species have also been recorded within a 10km radius of the vegetation under application, including two Priority 1, three Priority 2, nine Priority 3 and four Priority 4 species. Given the vegetation, soils and soil profile (Site Inspection 2007) and preferred habitats (Western Australian Herbarium 1998), these species not considered likely to occur within the vegetation under application.

Given the above, the proposed clearing is not likely to be at variance to this Principle.

Methodology References:

- Brown et al (1998)
- Site Inspection (2007) (TRIM Ref. DOC33175)
- Western Australian Herbarium (1998)
- GIS Database:
 - SAC Bio datasets 30/08/2007

(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 26 known occurrences of three Threatened Ecological Communities (TEC) within a 10 km radius of the vegetation under application including twenty two occurrences of TEC Floristic Community Type (FCT) 26a, one occurrence of Floristic Community Type 19b and three occurrences of Aquatic Root Mat Community of Caves on the Swan Coastal Plain Caves. FCT 26a is described as *Melaleuca huegelii* - *M. acerosa* shrublands of limestone ridges and FCT 19b is described as Woodlands over sedges in Holocene dune swales of the northern Swan Coastal Plain (Gibson et al. 1994).

The closest known occurrence of a TEC is Floristic Community Type 26a located approximately 400m from the vegetation under application. A small portion of the area under application (0.05ha) is located within the recommended buffer for this TEC, however given the degraded condition (Site Inspection 2007) of vegetation within this area, the proposed clearing of this vegetation is not considered likely to impact on this TEC occurrence.

The vegetation under application is described as *Banksia* woodland on deep yellow soils and is low in the landscape (Site Inspection 2007). Given this, the vegetation under application is not considered to represent an occurrence of a nearby TEC. Therefore, the proposed clearing is not likely to be at variance to this Principle.

Methodology References:

- Gibson et al. (1994)
- Site Inspection (2007) (TRIM Ref. DOC33175)
- GIS Database:
 - SAC Bio datasets 30/08/2007

(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 State Government is committed to the National Objective Targets for Biodiversity Conservation, which includes targets that prevent the clearing of ecological communities with an extent below 30% of that present pre-1750 (Commonwealth of Australia 2001).

	Pre-European area (ha)	Current extent (ha)	Remaining %	Conservation Status ****	% in reserves/ DEC managed land
IBRA Bioregion: Swan Coastal Plain **	1,501,456	571,758	38.1	Depleted	-
City of Wanneroo *	78,809	45,361	57.6	Least concern	-
Beard Vegetation Associations:					
- 1948*	81,022	17,315	21.4	Vulnerable	0.0
- 998**	51,017	21,178	41.5	Depleted	35.2
Hedde Vegetation Complex: ***					
Cottesloe Central and South	44,995	18,474	41.1	Depleted	8.8

* (Shepherd et al. 2001)

** (Shepherd 2006)

*** (EPA 2006)

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

Although Beard vegetation association 1948 has less than the recommended 30% minimum of Pre-European extent remaining (21.4% remaining), the applied area is considered to be within a constrained area. The EPA (2006) recognises the Perth Metropolitan Region as a 'constrained area', providing for the reduction of vegetation complexes to a minimum of 10% of the Pre-European extent. Given there is approximately 57.6% of Pre-European extent remaining in the local area, this being the City of Wanneroo, the proposal is therefore considered not likely to be at variance to this principle.

Methodology

References:

- Commonwealth of Australia (2001)
 - Department of Natural Resources and Environment (2002)
 - EPA (2006)
 - Hopkins et al. (2001)
 - Site Inspection (2007) (TRIM Ref. DOC33175)
 - Shepherd et al. (2001)
 - Shepherd (2006)
- GIS Databases:
- Pre-European Vegetation - DA 01/01
 - Hedde Vegetation Complexes - DEP 21/06/95
 - Interim Biogeographic Regionalisation of Australia - EA 18/10/00

(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**

There are no watercourses or wetlands mapped within the vegetation under application. A chain of wetlands run in a north-south direction to the east of the vegetation under application, and comprise of a Multiple Use Wetland (located ~1.6 km east), a Resource Enhancement Wetland (located ~1.7 km east) and a Conservation Category Wetland (located ~1.9 km east) and no watercourses are located in the local area.

The vegetation under application was observed to be degraded Banksia woodland on deep sandy yellow soils and no wetland dependent vegetation was observed during the Site Inspection (2007). Given this and the distance to nearby wetlands, the proposed clearing is not likely to be at variance to this Principle.

Methodology

Reference:

- Site Inspection (2007) (TRIM Ref. DOC33175)
- GIS Database:
- Geomorphic Wetlands (Classification), Swan Coastal Plain - DEC
 - Hydrography, linear - DOE 1/2/04
 - 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 may be at variance to this Principle**

The vegetation under application lies within soils associated with an undulating dune landscape with chief soils being siliceous sands with smaller areas of brown sands and leached sands in the wetter sites (Northcote et al. 1960-68).

The vegetation under application is located on soils with a Class 3 Acid Sulphate Soil (ASS) Risk. These soils are defined as having no known risk of ASS occurring within 3m of the natural soil surface that could be disturbed by the proposed development activities.

A site inspection of the vegetation under application (2007) revealed the soils on site to be yellow sands of the Spearwood dune system that have a high potential for wind erosion (State of Western Australia 2005). Thus, the clearing as proposed may be at variance to this Principle.

Methodology References:
- Northcote et al. (1960-68)
- Site Inspection (2007) (TRIM Ref. DOC33175)
- State of Western Australia (2005)
GIS Databases:
- Soils, Statewide - DA 11/99
- Acid Sulphate Soil risk map, Swan Coastal Plain, DEC

(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**

Bush Forever Site 383, incorporating Neerabup National Park, Lake Nowergup Nature Reserve and adjacent bushland, Neerabup (1,736.1ha) (Government of Western Australia 2000), is located 370 m east of the vegetation under application.

Bush Forever Site 383 and Neerabup National Park constitutes a considerable patch of bushland in a north south corridor. The area of vegetation under application forms part of a small north south linear remnant on the western side of the larger Bush Forever/Neerabup National Park corridor and is isolated on its eastern and western sides by cleared land.

Considering the degraded condition of the vegetation under application (Site Inspection 2007), the distance to Bush Forever site 383 and the lack of significance for faunal movement, the proposed clearing is not considered likely to have an impact on this nearby conservation area.

Methodology References:
- Government of Western Australia (2000)
- Site Inspection (2007) (TRIM Ref. DOC33175)
GIS Databases:
- Bushforever - MFP 07/01
- CALM Managed Lands and Waters - CALM 1/07/05
- Register of National Estate - EA 28/01/03
- Swan Coastal Plain North 20cm Orthomosaic - DLI06

(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 nearest wetland is located approximately 1.6 km east of the area under application and there are no watercourses in the local area. The area under application has a low risk of developing salinity problems in the future, with a groundwater depth of approximately 15m (Department of Environment 2004).

The vegetation under application is located within the Wanneroo Coastal Lakes Catchment and Perth Coastal Underground Water Pollution Control Area, a Priority 3 area. Advice from Department of Water (2007) states that clearing of native vegetation for the stock pile of sands that do not contain contaminants, is permitted within a P3 Pollution Control Area.

Considering the proximity of the area under application to wetlands and watercourses, a low risk of salinity and the fact that the proposed stock pile is permitted in a P3 area clearing is considered not likely to be at variance to this principle.

Methodology References:
- Department of Environment (2004)
- Department of Water (2007) (TRIM Ref. DOC33873)
GIS Databases:
- Evaporation Isopleths - BOM 09/98
- Groundwater Salinity, Statewide - DOW
- Hydrographic Catchments - Subcatchments - DOW
- Hydrography, linear - DOE 1/2/04
- Hydrography, linear (hierarchy) - DOW

- Isohyets - BOM 09/98
- Public Drinking Water Source Areas (PDWSAs) - DOW
- Salinity Risk LM 25m - DOLA 00
- Swan Coastal Plain North 20cm Orthomosaic - DLI06

(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 vegetation under application lies within soils associated with an undulating dune landscape with chief soils being siliceous sands with smaller areas of brown sands and leached sands in the wetter sites (Northcote et al. 1960-68). A site inspection (2007) of the vegetation under application revealed the soils on site to be yellow sands of the Spearwood dune system which have a high infiltration rate (State of Western Australia 2005).

The nearest wetland is approximately 1.6 km east of the area under application and there are no watercourses in the local area.

The area of vegetation under application is associated with a depth to groundwater of approximately 15m (Department of Environment 2004).

Considering the sandy nature of the soils (Site Inspection 2007), high infiltration rate, depth to groundwater and distance from wetlands and watercourses, the area of vegetation under application is not considered to cause, or exacerbate, the incidence or intensity of flooding in the immediate or surrounding areas.

Methodology References:

- Department of Environment (2004)
- Northcote et al. (1960-68)
- Site Inspection (2007) (TRIM Ref. DOC33175)
- State of Western Australia (2005)

GIS Database:

- Soils, Statewide - DA 11/99
- Geomorphic Wetlands (Classification), Swan Coastal Plain - DEC
- Hydrography, linear - DOE 1/2/04
- Hydrography, linear (hierarchy) - DOW

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

Comments

The original clearing permit application received was for the clearing of 4.5ha of native vegetation. The proponent has subsequently made a formal request to amend the area to 3.5 ha, removing a 1 ha area of native vegetation to the north which was identified as a Threatened Ecological Community (TRIM Ref. DOC33401).

A submission received from Bush Forever (2007) advises that as the proposed clearing is outside the boundary of Bush Forever area 383, the Strategic Biodiversity Planning (SBP) section (incorporating Bush Forever) has no objections to the clearing however recommends:

- | | |
|--|---|
| keep the stockpile outside | 1. Uniform fencing along the boundary abutting Bush Forever area 383, to Bush Forever, and; |
| removed, and there is to of the adjoining bush | 2. None of the vegetation within Bush Forever area 383 is to be disturbed or be no vegetation, earth spoil or other debris disposed within the boundary forever area. |

Main Roads Western Australia, as owner of the lands on which the proposed clearing is to occur, have granted permission for the Public Transport Authority to lodge a clearing permit application for this portion of Lot 21 (TRIM Ref. DOC32807).

Development Approval from the City of Wanneroo is not required for the proposed stockpile (Perth Transport Authority 2007).

There are no Registered Sites of Aboriginal Significance recorded within the area under application (TRIM Ref. DOC33449).

There is no required RIWI Act Licence, Works Approval or EPA Act Licence that affects the areas under application.

Methodology Reference:

- Bush Forever (2007) (TRIM Ref. DOC32172)
- Department of Indigenous Affairs (2007) (TRIM Ref. DOC33449)
- Submission. (2007) (TRIM Ref. DOC33401)
- Main Roads Western Australia (2007) (TRIM Ref. DOC32807)
- Perth Transport Authority (2007) (TRIM Ref. DOC41333)

GIS Databases:

- Aboriginal Sites of Significance - DIA
- Native Title Claims - DLI

4. Assessor's comments

Purpose	Method Applied	area (ha)/ trees	Comment
Stockpile	Mechanical Removal	3.5	The application has been assessed against the clearing principles, planning instruments and other matters in accordance with s51O of the Environmental Protection Act 1986, and the proposed clearing may be at variance to Principle (g).

5. References

- Brown A., Thomson-Dans C. and Marchant N., (1998). Western Australia's Threatened Flora, Department of Conservation and Land Management, Western Australia.
- Bush Forever. (2007). Advice RE: Application to clear native vegetation Lot 21 on plan 12467, Ridgewood. Department of Planning and Infrastructure. Perth, Western Australia. TRIM Ref. DOC32172.
- Commonwealth of Australia (2001). National Targets and Objectives for Biodiversity Conservation 2001-2005, AGPS, Canberra.
- Department of Environment (2004) Perth Groundwater Atlas, Second Edition, 2004.
- Department of Indigenous Affairs. (2007). Aboriginal Heritage Inquiry System. Perth, Western Australia. <http://www.dia.wa.gov.au/Heritage/Inquiry/>. Accessed 10 September 2007. TRIM Ref. DOC33449.
- Department of Natural Resources and Environment (2002) Biodiversity Action Planning. Action planning for native biodiversity at multiple scales; catchment bioregional, landscape, local. Department of Natural Resources and Environment, Victoria.
- Department of Water. (2007). Advice RE: Acceptable land uses within the P3 Perth Coastal Underground Water Pollution Control Area. TRIM Ref. DOC33873.
- 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.
- Gibson et al. (1994). A Floristic Survey of the Southern Swan Coastal Plain. Western Australian Department of Conservation and Land Management.
- 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, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.
- Main Roads Western Australia. (2007). Permission to lodge application for clearing permit - Lot 21 Butler. TRIM Ref. DOC32807.
- 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.
- Perth Transport Authority. (2007). CPS 1994 Lot 21 on Plan 12469 Ridgewood - Response from PTA stating that Development Approval is not required from the City of Wanneroo. (TRIM Ref. DOC41333)
- 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.
- Site Inspection. (2007). Site Inspection Report, Department of Environment and Conservation (DEC). Perth, Western Australia. TRIM Ref. DOC33175.
- State of Western Australia. (2005) Agmaps Land Manager CD Rom.
- Submission. (2007). Notification of amendment to application CPS 1994/1, reducing area under application to 3.5 ha from 4.5. TRIM Ref. DOC33401.
- Western Australian Herbarium (1998-). FloraBase - The Western Australian Flora. Department of Environment and Conservation. <http://florabase.calm.wa.gov.au/> (Accessed 10 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)