



CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

PERMIT DETAILS

Purpose Permit Number: 3333 / 1

File Number: DEC 13231

Duration of Permit: From 23 November 2009 to 23 November 2011

PERMIT HOLDER

City of Armadale

LAND ON WHICH CLEARING IS TO BE DONE

LOT 144 ON PLAN 4857 (House No. 401 RAILWAY ARMADALE 6112)

LOT 70 ON DIAGRAM 87334 (House No. 3 LITTLE JOHN ARMADALE 6112)

LOT 71 ON DIAGRAM 87334 (House No. 1 LITTLE JOHN ARMADALE 6112)

LOT 1612 ON PLAN 2705 (House No. 381 RAILWAY ARMADALE 6112)

LOT 143 ON PLAN 4857 (House No. 39 ABBEY ARMADALE 6112)

LOT 164 ON PLAN 4857 (House No. 37 ABBEY ARMADALE 6112)

LOT 163 ON PLAN 4857 (House No. 35A ABBEY ARMADALE 6112)

LOT 162 ON PLAN 4857 (House No. 33 ABBEY ARMADALE 6112)

ROAD RESERVE (ARMADALE 6112)

PURPOSE FOR WHICH THE CLEARING MAY BE DONE

Clearing for the purpose of road construction.

CONDITIONS

1. The Permit Holder must not clear more than 0.996 hectares of native vegetation within the area cross hatched yellow on attached Plan 3333/1.

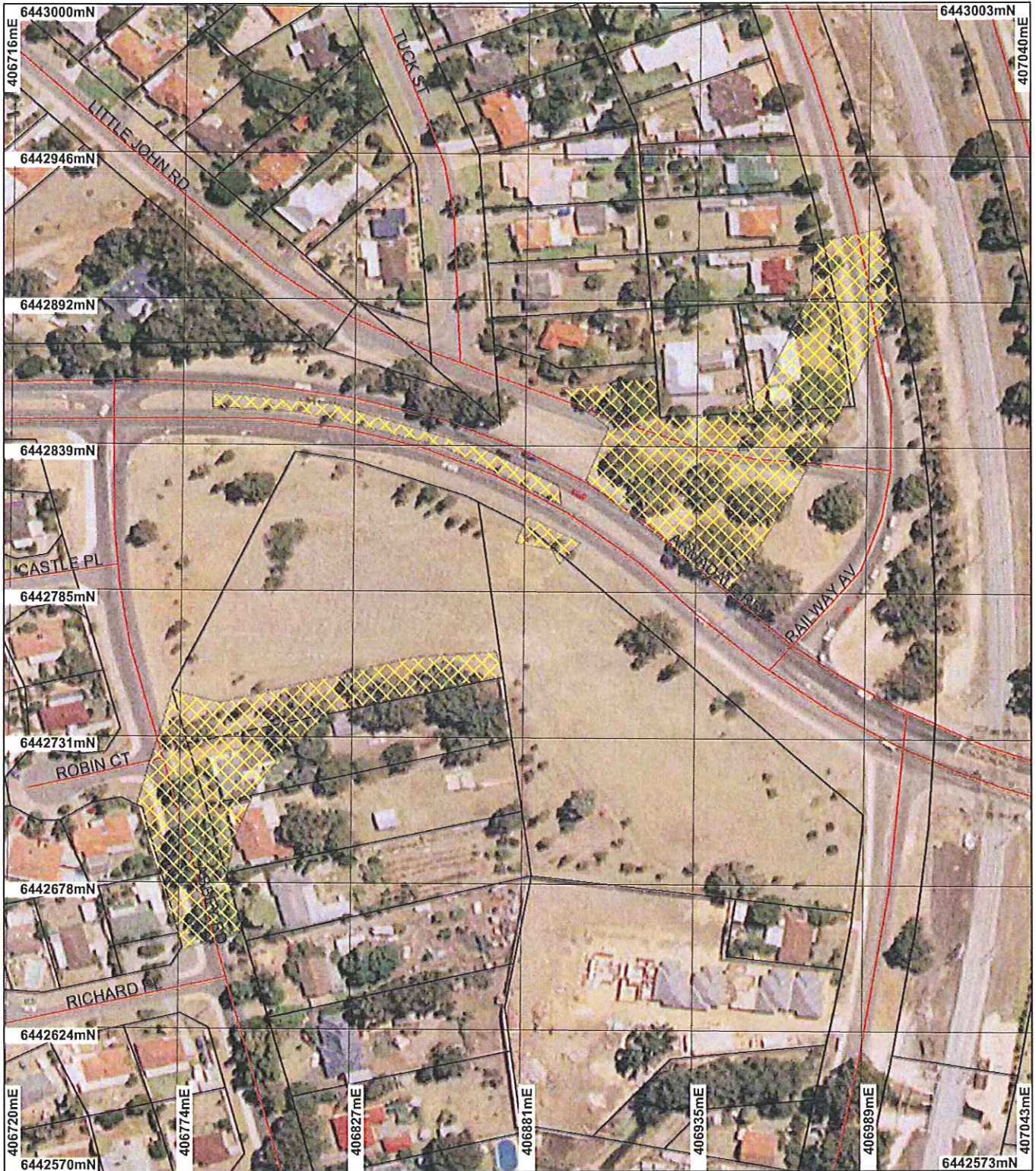
A handwritten signature in black ink, appearing to read "K Faulkner", written over a horizontal line.

Kelly Faulkner
MANAGER
NATIVE VEGETATION CONSERVATION BRANCH

*Officer delegated under Section 20
of the Environmental Protection Act 1986*

22 October 2009

Plan 3333/1



LEGEND

- Road Centrelines
 - Cadastre
 - Areas Approved to Clear
- Jarrahdale 50cm Orthomosaic
- Landgate 2008



0 ————— 50 m

Scale 1:1900

(Approximate when reproduced at A4)

Geocentric Datum Australia 1994

Note: the data in this map have not been projected. This may result in geometric distortion or measurement inaccuracies.

 Date 22/10/09
Kelly Faulkner

Officer with delegated authority under Section 20 of the Environmental Protection Act 1986

Information derived from this map should be confirmed with the data custodian acknowledged by the agency acronym in the legend.



Department of Environment and Conservation

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* Project Data is denoted by asterisk. This data has not been quality assured. Please contact map author for details.



1. Application details

1.1. Permit application details

Permit application No.: 3333/1
 Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: City of Armadale

1.3. Property details

Property: LOT 144 ON PLAN 4857 (House No. 401 RAILWAY ARMADALE 6112)
 LOT 70 ON DIAGRAM 87334 (House No. 3 LITTLE JOHN ARMADALE 6112)
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 LOT 71 ON DIAGRAM 87334 (House No. 1 LITTLE JOHN ARMADALE 6112)
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 ROAD RESERVE (ARMADALE 6112)

Local Government Area:

Colloquial name:

1.4. Application

| | | | |
|--------------------|-----------|--------------------|----------------------------------|
| Clearing Area (ha) | No. Trees | Method of Clearing | For the purpose of: |
| 0.996 | | Mechanical Removal | Road construction or maintenance |
| | | 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 999: Medium woodland; marri (Shepherd et al. 2007). | Native vegetation is limited to approximately 12 marri (Corymbia calophylla) trees. Majority of the area under application is cleared parkland or planted gardens (Jarrahdale 50cm Orthomosaic - Landgate 2006; City of Armadale 2009). | Completely Degraded: No longer intact; completely/almost completely without native species (Keighery 1994) | Native vegetation in the road reserve is in a 'completely degraded' (Keighery 1994) condition and impacted by surrounding urban landuses (Jarrahdale 50cm Orthomosaic - Landgate 2006). The condition of the vegetation has been assessed through aerial photos (Jarrahdale 50cm Orthomosaic - Landgate 2006) and information provided in the application (City of Armadale 2009). |
| Hedde vegetation complex 32: Guildford Complex : A mixture of open forest to tall open forest of Corymbia calophylla (Marri) - Eucalyptus wandoo (Wandoo) - Eucalyptus marginata (Jarrah) and woodland of Eucalyptus wandoo (Wandoo) (with rare occurrences of Eucalyptus lane-poolei (Salmon White Gum)). Minor components include Eucalyptus rudis (Flooded Gum) - Melaleuca raphiophylla (Swamp Paperbark) (Hedde et al. 1980). | | | |

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

There are 47 known records of priority flora species within the local area (10 km radius): *Acacia lasiocarpa* var. *bracteolata* long peduncle variant (G.J. Keighery (P1); *Tripterococcus paniculatus* - P1; two records of *Schoenus pennisetis* - P1; *Acacia benthamii* - P2; *Apodasmia ceramophila* - P2; *Trichocline* sp. *Treeton* (B.J. Keighery & N. Gibson 564) - P2; *Acacia horridula* - P3; six records of *Acacia oncinophylla* subsp. *patulifolia* - P3; two records of *Aotus cordifolia* - P3; two records of *Asteridea gracilis* - P3; *Halgania corymbosa* - P3; *Rhodanthe pyrethrum* - P3; *Stylidium longitubum* - P3; *Thelymitra magnifica* - P3; *Calothamnus graniticus* subsp. *leptophyllus* - P4; 13 records of *Calothamnus rupestris* - P4; three records of *Drosera occidentalis* subsp. *occidentalis* - P4; two records of *Jacksonia sericea* - P4; three records of *Verticordia lindleyi* subsp. *lindleyi* - P4; two records of *Villarsia submerse* - P4.

Two priority ecological communities are known from the local area (10 km radius): five occurrences of Low lying *Banksia attenuata* woodlands or shrublands (P3) and 11 occurrences of Central Granite Shrublands (P4).

The area under application is 0.996 ha with native vegetation limited to 12 marri (*Corymbia calophylla*) trees on cleared parkland surrounded by urban landuses and road networks (Jarrahdale 50cm Orthomosaic - Landgate 2006; City of Armadale 2009). The proposed clearing is for the purpose of road reconstruction. The remaining native vegetation in the property appears to be in a 'completely degraded' (Keighery 1994) condition and subject to significant disturbance from surrounding landuses.

As it is parkland cleared, the area under application is not likely to contain high levels of biological diversity. Due to the significant disturbance and 'completely degraded' (Keighery 1994) condition, the vegetation under application is not likely to have any significant understorey which can support priority flora species or species found in the priority ecological communities.

Methodology

City of Armadale 2009

Keighery 1994

GIS Databases:

- Clearing Regulations, Environmentally Sensitive Areas 30/05/05
- Jarrahdale 50cm Orthomosaic - Landgate 2006
- NLWRA, Current Extent of Native Vegetation 20/01/01
- SAC Biodatasets - accessed 15/10/09

(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

Thirteen fauna species of conservation significance are known to occur within the local area (10 km radius): *Acanthopis antarcticus* (Southern Death Adder), *Bettongia penicillata ogilbyi* (Woylie), *Calyptorhynchus banksii naso* (Forest Red-tailed Black-Cockatoo), *Calyptorhynchus latirostris* (Carnaby's Black Cockatoo), *Dasyurus geoffroyi* (Chuditch), *Falco peregrinus* (Peregrine Falcon), *Isoodon obesulus fusciventer* (Quenda), *Leioproctus contraries* (bee), *Macropus irma* (Western Brush Wallaby), *Myrmecobius fasciatus* (Numbat), *Phascogale tapoatafa* ssp. (WAM M434) (Brush-tailed Phascogale) and *Westralunio carteri*, *Morelia spilota imbricata* (Carpet Python). The closest known record is *Hydromys chrysogaster* (Water-rat) occurring approximately 1.1 km west of the area under application.

An area of 0.996 ha is proposed to be cleared within an urban landscape. The native vegetation in the applied area is limited to approximately 12 marri (*Corymbia calophylla*) trees. These trees may provide habitat for *Calyptorhynchus banksii naso* (Forest Red-tailed Black-Cockatoo) and *Calyptorhynchus latirostris* (Carnaby's Black Cockatoo). The vegetation is in a 'completely degraded' (Keighery 1994) condition (City of Armadale 2009).

Considering the disturbance from surrounding urban landuses and 'completely degraded' (Keighery 1994) vegetation condition, the area under application is unlikely to provide significant habitat for fauna of conservation significance or facilitate movement through the landscape for other native fauna species.

Methodology

City of Armadale 2009

Keighery 1994

GIS Databases:

- Jarrahdale 50cm Orthomosaic - Landgate 2006
- SAC Biodatasets - accessed 15/10/09

(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

There are 30 known occurrences of the following eight species of rare flora in the local area (10 km radius): six records of *Caladenia huegelii*, two records of *Darwinia apiculata*, six records of *Diuris purdiei*, two records of *Drakaea elastica*, one record of *Goodenia arthrotricha*, one record of *Lepidosperma rostratum*, seven records of *Thelymitra stellata* and four records of *Verticordia plumosa* var. *pleiobotrya*. The closest known record is *Eucalyptus balanites* located approximately 3.5 km south of the area under application.

Eucalyptus balanites and one record of the *Diuris purdiei* are known to occur in the same soil type mapped for the area under application.

The majority of the area under application is cleared parkland or planted gardens. The native vegetation in the applied area is limited to approximately 12 marri (*Corymbia calophylla*) trees. (City of Armadale 2009)

Based on the urban landuse history, it is unlikely that the vegetation under application supports the rare flora known to occur in this region including *Eucalyptus balanites* and *Diuris purdiei*.

Methodology City of Armadale 2009
GIS Databases:
- Jarrahdale 50cm Orthomosaic - Landgate 2006
- SAC Biodatasets - accessed 15/10/09
- Soils, Statewide DA 11/99

(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 62 known records of threatened ecological communities (TECs) in the local area (10 km radius): *Eucalyptus calophylla* - *Kingia australis* woodlands on heavy soils - 14 records, *Eucalyptus calophylla* - *Xanthorrhoea preissii* woodlands and shrublands - one record, Shrublands on dry clay flats - 10 records, *Banksia attenuata* and/or *Eucalyptus marginata* woodlands of the eastern side of the Swan Coastal Plain - 18 records, Southern wet shrublands - one record, Shrublands and woodlands on *Muchea* Limestone - one record, *Eucalyptus calophylla* - *Eucalyptus marginata* woodlands on sandy clay soils of the southern Swan Coastal Plain - four records, Dense shrublands on clay flats - one record and Herb rich shrublands in clay pans - 12 records.

The native vegetation in the applied area is limited to approximately 12 marri (*Corymbia calophylla*) trees and in a 'completely degraded' (Keighery 1994) condition (City of Armadale 2009) due to surrounding urban landuses.

Considering the condition and disturbance, it is unlikely that the vegetation under application represents, or is likely to be supporting, any known TECs.

Methodology City of Armadale 2009
Keighery 1994
GIS Databases:
- Heddle Vegetation Complexes - DEP 22/06/95
- Jarrahdale 50cm Orthomosaic - Landgate 2006
- SAC Biodatasets - accessed 15/10/09
- Soils, Statewide DA 11/99

(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 area under application is mapped as the Beard Vegetation Association 999: Medium woodland; marri, of which there is 10.8 % of its pre-European extent remaining within the Swan Coastal Plain bioregion. The Swan Coastal Plain IBRA Bioregion has 38.8 % of its pre-European vegetation extent remaining. (Shepherd 2007)

The Environmental Protection Authority (EPA) supports a 30 % threshold level of pre-European vegetation as recommended in the National Objectives Targets for Biodiversity Conservation below which species loss appears to accelerate exponentially at an ecosystem level (EPA 2000). The vegetation complexes that occur within the area under application are under the 30 % threshold.

The area of application is 0.996 ha where majority is cleared parkland or planted gardens with native vegetation limited to approximately 12 marri (*Corymbia calophylla*) trees (Jarrahdale 50cm Orthomosaic - Landgate 2006; City of Armadale 2009). The vegetation is in a 'completely degraded' (Keighery 1994) condition (City of Armadale 2009).

Given the small scale of clearing (12 marri trees) and the condition, the vegetation under application is not

considered as a significant remnant of native vegetation in an extensively cleared landscape.

| | Pre-European (ha) | Current extent (ha) | Remaining (%) | In secure tenure (%) |
|--|----------------------|------------------------|------------------|-------------------------|
| IBRA Bioregion* | | | | |
| Swan Coastal Plain Shire | 1,501,208 | 583,140 | 38.8 | 32.5 |
| City of Armadale Beard vegetation type* | 79,692 | 66,056 | 83.0 | 84.4 |
| 999 | 102,939 | 11,099 | 10.8 | 0.9 |
| Hedde Vegetation Complex 32 | 92,497 | 4,662 | 5.0 | 3.1 |

* (Shepherd 2007)

Methodology City of Armadale 2009
EPA 2000
Keighery 1994
Shepherd 2007
GIS Databases:
- Jarrahdale 50cm Orthomosaic - Landgate 2006
- Interim Biogeographic Regionalisation of Australia - EA 18/10/00
- Local Government Authorities - DLI 8/07/04
- Pre European Vegetation - DA 01/01
- SAC Biodatasets - accessed 15/10/09
- NLWRA, Current Extent of Native Vegetation 20/01/01

(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 some Conservation Category Wetlands to the north and east of the proposal area. The closest of them is situated approximately 2.1 km northeast of the area under application. The closest watercourse is a major drain situated approximately 150 south of the area under application.

The majority of the area under application is cleared parkland or planted gardens and native vegetation is limited to approximately 12 marri (*Corymbia calophylla*) trees (Jarrahdale 50cm Orthomosaic - Landgate 2006; City of Armadale 2009).

Given the distance between the vegetation under application and the surface hydrological features and the small scale, the proposed clearing is not likely to impact the wetlands or watercourses.

Methodology City of Armadale 2009
- ANCA wetlands - Environment Australia 26/3/99
- Clearing Regulations, Environmentally Sensitive Areas 30/05/05
- EPP Lakes Policy Area - DEP 14/05/97
- EPP, Wetlands 2004 (DRAFT) - EPA 21/7/04
- Geomorphic Wetlands (Mgt Categories) - Swan Coastal Plain
- Hydrography, linear - DoW
- Hydrography, linear (hierarchy) - DoW
- Jarrahdale 50cm Orthomosaic - Landgate 2006
- Ramsar wetlands - DEC 03

(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

Chief soils are sandy acidic yellow mottled soils, some of which contain ironstone gravel (Northcote et al. 1960-68). There is a low to moderate risk of acid sulphate soil occurring within 3 m of natural soil surface that could be disturbed by most land development activities, however the proposed road upgrade activities are not likely to cause soil contamination issues (City of Armadale 2009).

The clearing is proposed to take place in small strips ranging in width between 4 m and 60 m. Due to the small scale, the proposed clearing is not likely to cause appreciable land degradation in the form of wind or water erosion.

Methodology Northcote et al (1960-68)

City of Armadale (2009)

GIS Databases:

- Acid Sulfate Soil Risk Map, Swan coastal Plain - DEC 07/08/06
- Average Annual Rainfall Isohyets - WRC 29/09/98
- Groundwater Salinity, Statewide - DoW
- Jarrahdale 50cm Orthomosaic - Landgate 2006
- Salinity Risk LM 25m - DOLA
- Soils, Statewide - DA
- Topographic Contours, Statewide - DOLA

(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 nearest conservation area is an un-named nature reserve situated approximately 3.3 km south of the area under application. The vegetation under application is surrounded by urban landuses and in a 'completely degraded' (Keighery 1994) condition (City of Armadale 2009). Thus it is not likely to provide buffering or ecological linkage to this conservation area.

Wirra Willa Gardens, which is in the Register of National Estate, is situated approximately 750 m east of the area under application. As it is situated at a higher elevation than the area under application, the proposed clearing is not likely to impact this conservation area.

Methodology City of Armadale 2009

Keighery 1994

GIS Databases:

- DEC Tenure
- Jarrahdale 50cm Orthomosaic - Landgate 2006
- Register of National Estate - EA
- Systems 1-5 and 7-12 Areas - DEC
- Topographic Contours, Statewide - DOLA

(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 no hydrographic features within the area under application. There are some Conservation Category Wetlands to the north and east of the proposal area and the closest is situated approximately 2.1 km northeast of the area under application. A major drain known as Neerigen Brook is running approximately 750 m to the south of the area under application.

The majority of the area under application is cleared parkland or planted gardens with native vegetation limited to approximately 12 marri (*Corymbia calophylla*) trees (Jarrahdale 50cm Orthomosaic - Landgate 2006; City of Armadale 2009).

Given the distance to the nearest wetland and limited native vegetation within the area under application it is not considered likely that the proposed clearing will result in deterioration in the quality of surface or underground water.

Methodology City of Armadale 2009

GIS Databases:

- Groundwater Salinity, Statewide - DoW
- Hydrographic Catchments - Catchments - DoW
- Hydrography, linear - DoW
- Jarrahdale 50cm Orthomosaic - Landgate 2006
- Public Drinking Water Source Areas (PDWSAs) - 07/02/06
- RiWI, Areas - DoW
- Salinity Risk LM 25m - DOLA
- Topographic Contours, Statewide - DOLA

(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

Chief soils are sandy acidic yellow mottled soils, some of which contain ironstone gravel (Northcote et al. 1960-68). The proposed clearing area has a flat topography and the nearest surface water expression area, which is an Aboriginal Site of Significance (Neerigen Brook), is located approximately 750 m to the south of the area under application.

The area under application is 0.996 ha where majority is cleared parkland or planted gardens with native vegetation limited to approximately 12 marri (*Corymbia calophylla*) trees (Jarrahdale 50cm Orthomosaic - Landgate 2006; City of Armadale 2009). The vegetation is in a 'completely degraded' (Keighery 1994) condition (City of Armadale 2009).

Given the sandy soils, where water infiltration is expected to be high, and the condition of the vegetation, the proposed clearing is not likely to cause waterlogging or exacerbate flooding.

Methodology City of Armadale 2009
Keighery 1994
GIS Databases:
- Hydrographic Catchments - Catchments - DoW
- Hydrography, linear - DoW
- Jarrahdale 50cm Orthomosaic - Landgate 2006
- Soils, Statewide - DA
- Topographic Contours, Statewide - DOLA
- Average Annual Rainfall Isohyets - WRC 29/09/98

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

Comments

According to cadastral information, part of the area under application is designated as 'road reserve' for public roads. Other parts are private properties which have been negotiated to be acquired by City of Armadale.

There are Aboriginal Sites of Significance in close proximity however the proposed clearing area is not encroaching any of them.

Methodology GIS Databases:
- Aboriginal Sites of Significance 26 April 2007
- Cadastre - Landgate Dec 07
- Native Title Claims - LA 2/5/07

4. Assessor's comments

Comment

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 is not likely to be at variance to any of the Principles.

5. References

- City of Armadale (2009) Application for a clearing permit (purpose permit). City of Armadale, Western Australia. DEC TRIM Ref: DOC 98373.
- 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, Western Australia.
- 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.
- 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. (2007). 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.

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) |