



CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

Purpose Permit number:	CPS 5242/3
Permit Holder:	Commissioner of Main Roads Western Australia
Duration of Permit:	19 April 2013 – 19 April 2024

ADVICE NOTE:

The funds referred to in condition 8 of this permit are intended for contributing towards the purchase of a combined total of 28.06 hectares of native vegetation containing threatened ecological communities FCT02, FCT20a, FCT20b and FCT3a.

The Permit Holder is authorised to clear native vegetation subject to the following conditions of this Permit.

PART I – CLEARING AUTHORISED

1. Purpose for which clearing may be done

Clearing for the purpose of road construction and associated activities for the Gateway WA (Perth Airport and Freight Access) Project including construction of the Roe Highway and Berkshire Rd interchange.

2. Land on which clearing is to be done

LOT 07 ON PLAN 2302 (KEWDALE 6105)
LOT 10 ON PLAN 2302 (FORRESTFIELD 6058)
LOT 1002 ON PLAN 31502 (FORRESTFIELD 6058)
LOT 10124 ON PLAN 215187 (FORRESTFIELD 6058)
LOT 10125 ON PLAN 215187 (FORRESTFIELD 6058)
LOT 10126 ON PLAN 215187 (FORRESTFIELD 6058)
LOT 102 ON DIAGRAM 64717 (FORRESTFIELD 6058)
LOT 10210 ON PLAN 215187 (FORRESTFIELD 6058)
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LOT 10785 ON PLAN 187485 (FORRESTFIELD 6058)
LOT 1094 ON PLAN 5273 REDCLIFFE 6104)
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LOT 11296 ON PLAN 16812 (FORRESTFIELD 6058)

LOT 11741 ON PLAN 190361 (KEWDALE 6105)
LOT 12 ON DIAGRAM 74873 (KEWDALE 6105)
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LOT 86 ON PLAN 7067 (WATTLE GROVE 6107)
LOT 87 ON PLAN 7067 (WATTLE GROVE 6107)
LOT 88 ON PLAN 7067 (WATTLE GROVE 6107)
LOT 9 ON PLAN 2302 (FORRESTFIELD 6058)
LOT 9005 ON PLAN 39975 (FORRESTFIELD 6058)
LOT 9947 ON PLAN 183309 (FORRESTFIELD 6058)

ROAD RESERVE (HIGH WYCOMBE 6057)
ROAD RESERVE (MAIDA VALE 6057)
ROAD RESERVES (ASCOT 6104)
ROAD RESERVES (BELMONT 6105)
ROAD RESERVES (CLOVERDALE 6105)
ROAD RESERVES (FORRESTFIELD 6058)
ROAD RESERVES (KEWDALE 6105)
ROAD RESERVES (PERTH AIRPORT 6105)
ROAD RESERVES (REDCLIFFE 6104)
ROAD RESERVES (WATTLE GROVE 6107)

3. Area of Clearing

The Permit Holder must not clear more than 114.85 hectares of native vegetation within the area shaded yellow on attached Plan 5242/3a.

4. Application

This Permit allows the Permit Holder to authorise persons, including employees, contractors and agents of the Permit Holder, to clear native vegetation for the purposes of this Permit subject to compliance with the conditions of this Permit and approval from the Permit Holder.

5. Type of clearing authorised

This Permit authorises the Permit Holder to clear native vegetation for the purpose described in condition 1 of this Permit to the extent that the Permit Holder has the power to carry out works involving clearing for that purpose under the *Main Roads Act 1930* or any other written law.

PART II – ASSESSMENT SEQUENCE AND MANAGEMENT PROCEDURES

6. Avoid, minimise etc clearing

In determining the amount of native vegetation to be cleared authorised under this Permit, the Permit Holder must have regard to the following principles, set out in order of preference:

- (a) avoid the clearing of native vegetation;
- (b) minimise the amount of native vegetation to be cleared; and
- (c) reduce the impact of clearing on any environmental value.

7. Environmental Management Plan

- (a) The Permit Holder must implement and adhere to “Management Plan – Gateway WA Perth Airport and Freight Access Project – Construction Environmental Management Plan – DER – Document No. GWA-PW-MNP-EN-0002 Rev: 02”.
- (b) If it is necessary to modify “Management Plan – Gateway WA Perth Airport and Freight Access Project – Construction Environmental Management Plan – DER – Document No. GWA-PW-MNP-EN-0002 Rev: 02”, the Permit Holder must submit the modified Environmental Management Plan to the CEO.
- (c) A modified Environmental Management Plan must not be implemented until approved by the CEO.
- (d) An approved modified Environmental Management Plan supersedes “Management Plan – Gateway WA Perth Airport and Freight Access Project – Construction Environmental Management Plan – DER – Document No. GWA-PW-MNP-EN-0002 Rev: 02”.

8. Offsets (funds)

- (a) In relation to clearing within the area shaded red on attached Plan 5242/3b, the Permit Holder shall provide funding of \$2,665,600 to the Department of Environment Regulation for the purpose of establishing or maintaining native vegetation.

- (b) Prior to undertaking clearing authorised under this Permit within the area shaded red on attached Plan 5242/3c, the Permit Holder shall provide documentary evidence to the CEO that funding of \$1,824,000 has been transferred to the Department of Environment Regulation for the purpose of establishing or maintaining native vegetation.
- (c) Prior to 31 December 2014, the Permit Holder may submit an *offset proposal* to the CEO to modify the *offset* identified under condition 8(a) of this Permit.
- (d) Prior to 31 December 2015, the Permit Holder may submit an *offset proposal* to the CEO to modify the *offset* identified under condition 8(b) of this Permit.
- (e) An approved *offset proposal* under condition 8(c) of this Permit supersedes the *offset* identified under condition 8(a) of this Permit.
- (f) An approved *offset proposal* under condition 8(d) of this Permit supersedes the *offset* identified under condition 8(b) of this Permit.

9. Offsets (land acquisitions)

- (a) The Permit Holder must fund the purchase of the area shaded red on attached Plan 5242/3d to be ceded to the Department of Parks and Wildlife for conservation.
- (b) Prior to the 31 December 2016, the Permit Holder must cede the area shaded red on attached Plan 5242/3e to the Department of Parks and Wildlife for conservation.
- (c) The Permit Holder shall provide documentary evidence to the CEO that the area shaded red on attached Plan 5242/3e has been ceded to the Department of Parks and Wildlife within three months of executing the land transfer.

10. Offset (Rehabilitation Plan)

- (a) The Permit Holder must implement and adhere to "Management Plan – Gateway WA Perth Airport and Freight Access Project – Rehabilitation Plan – Pioneer Park Offset – Document No. GWA-PW-MNP-EN-0013 Rev: 0".
- (b) If it is necessary to modify the "Management Plan – Gateway WA Perth Airport and Freight Access Project – Rehabilitation Plan – Pioneer Park Offset – Document No. GWA-PW-MNP-EN-0013 Rev: 0", the Permit Holder must submit the modified Rehabilitation Plan to the CEO.
- (c) A modified Rehabilitation Plan must not be implemented until approved by the CEO.
- (d) An approved modified Rehabilitation Plan supersedes "Management Plan – Gateway WA Perth Airport and Freight Access Project – Rehabilitation Plan – Pioneer Park Offset – Document No. GWA-PW-MNP-EN-0013 Rev: 0".
- (e) The Permit Holder must complete implementation of "Management Plan – Gateway WA Perth Airport and Freight Access Project – Rehabilitation Plan – Pioneer Park Offset – Document No. GWA-PW-MNP-EN-0013 Rev: 0" or an approved modified Rehabilitation Plan by no later than 19 January 2024.

11. Monitoring Plan

- (a) The Permit Holder must implement and adhere to "Management Plan – Gateway WA Perth Airport and Freight Access Project – Monitoring of Vegetation Health for Wetlands and Threatened Ecological Communities for Gateway WA – Document No. GWA-PW-MNP-EN-0018 Rev: 0".
- (b) If it is necessary to modify "Management Plan – Gateway WA Perth Airport and Freight Access Project – Monitoring of Vegetation Health for Wetlands and Threatened Ecological Communities for Gateway WA – Document No. GWA-PW-MNP-EN-0018 Rev: 0", the Permit Holder must submit the modified Monitoring Plan to the CEO.

- (c) A modified Monitoring Plan must not be implemented until approved by the CEO.
- (d) An approved modified Monitoring Plan supersedes "Management Plan – Gateway WA Perth Airport and Freight Access Project – Monitoring of Vegetation Health for Wetlands and Threatened Ecological Communities for Gateway WA – Document No. GWA-PW-MNP-EN-0018 Rev: 0".

12. Dieback and weed control

When undertaking any clearing or other activity authorised under this Permit, the Permit Holder must take the following steps to minimise the risk of the introduction and spread of *weeds* and *dieback*:

- (a) clean earth-moving machinery of soil and vegetation prior to entering and leaving the area to be cleared;
- (b) ensure that no *dieback* or *weed*-affected soil, *mulch*, *fill* or other material is brought into the area to be cleared; and
- (c) restrict the movement of machines and other vehicles to the limits of the areas to be cleared.

13. Flora management

Where rare flora listed in the *Wildlife Conservation (Rare Flora) Notice* occurs within the area shaded yellow on attached Plan 5242/3a, the Permit Holder shall ensure that:

- (a) no more than sixty-two (62) plants of rare flora species *Conospermum undulatum* are cleared; and
- (b) no clearing of identified rare flora occurs unless in accordance with the *Wildlife Conservation Act 1950*.

PART III - RECORD KEEPING AND REPORTING

14. Records must be kept

The Permit Holder must maintain the following records for activities done pursuant to this Permit:

- (a) In relation to the clearing of native vegetation authorised under this Permit:
 - (i) the location where the clearing occurred, recorded as a *shapefile*;
 - (ii) the date that the area was cleared; and
 - (iii) the size of the area cleared (in hectares).
- (b) In relation to the management of areas pursuant to condition 7 of this Permit, records of the Environmental Management Plan activities undertaken in accordance with the Environmental Management Plan.
- (c) In relation to the offset of areas pursuant to condition 8 of this Permit:
 - (i) the location of any area of spatial *offsets* recorded as a *shapefile*;
 - (ii) a description of the spatial *offset* activities undertaken; and
 - (iii) the size of the spatial *offset* area (in hectares).
- (d) In relation to the offset of areas pursuant to condition 10 of this Permit:
 - (i) the location of any area of spatial *offsets* recorded as a *shapefile*;
 - (ii) a description of the Rehabilitation Plan activities undertaken; and
 - (iii) the size of the *offset* area (in hectares).
- (e) In relation to the monitoring of areas pursuant to condition 11 of this Permit:
 - (i) a description of the Monitoring Plan activities undertaken; and
 - (ii) a report, prepared by an *environmental specialist*, detailing the results of the Monitoring Plan activities undertaken.

- (f) In relation to flora management pursuant to condition 13 of this Permit:
- (i) the location of each rare flora species cleared, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings or decimal degrees;
 - (ii) the date(s) that rare flora was cleared; and
 - (iii) the number of rare flora plants that were cleared.

15. Reporting

- (a) The Permit Holder must provide to the CEO on or before 30 June of each year, a written report:
- (i) of records required under condition 14 of this Permit; and
 - (ii) concerning activities done by the Permit Holder under this Permit between 1 January to 31 December of the preceding calendar year.
- (b) If no clearing authorised under this Permit was undertaken between 1 January to 31 December of the preceding calendar year, a written report confirming that no clearing under this permit has been carried out, must be provided to the CEO on or before 30 June of each year.
- (c) Prior to 19 January 2024, the Permit Holder must provide to the CEO a written report of records required under condition 14 of this Permit where these records have not already been provided under condition 15(a) of this Permit.

DEFINITIONS

The following meanings are given to terms used in this Permit:

dieback means the effect of *Phytophthora* species on native vegetation;

environmental specialist means a person who holds a tertiary qualification in environmental science or equivalent, and has experience relevant to the type of environmental advice that an environmental specialist is required to provide under this Permit, or who is approved by the CEO as a suitable environmental specialist;

fill means material used to increase the ground level, or fill a hollow;

mulch means the use of organic matter, wood chips or rocks to slow the movement of water across the soil surface and to reduce evaporation;

offset proposal/s means a documented plan that addresses the principles outlined in the Government of Western Australia, WA Environmental Offsets Policy, September 2011;

offset/s means an offset required to be implemented under condition 8, condition 9, and/or condition 10 of this Permit;

shapefile means a shapefile consisting of polygons using the Geocentric Datum of Australia 1994 (GDA94);

weed/s means any plant -

- (a) that is a declared pest under section 22 of the *Biosecurity and Agriculture Management Act 2007*; or
- (b) published in a Department of Parks and Wildlife Regional Weed Rankings Summary, regardless of ranking; or
- (c) not indigenous to the area concerned.

Wildlife Conservation (Rare Flora) Notice means those plant taxa gazetted as rare flora pursuant to section 23F(2) of the *Wildlife Conservation Act 1950* (as amended).



Jason Banks
DIRECTOR GENERAL

16 October 2014

Plan 5242/3a



LEGEND

- | | |
|-----------------------------|---|
| Clearing Instruments | <input type="checkbox"/> Local Government Authorities |
| Areas Approved to Clear | |
| Road Centrelines | |



Scale 1:50000
(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.

J Banks 16/10/19 Date

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



Government of Western Australia
Department of Environment Regulation

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Plan 5242/3b



LEGEND

- | | |
|--|---|
| Clearing Instruments | <input type="checkbox"/> Local Government Authorities |
| <input type="checkbox"/> Areas Subject to Conditions | |
| <input checked="" type="checkbox"/> Road Centrelines | |



Scale 1:20000
(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.

J. Benge *[Signature]* 16/10/19 Date

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Government of Western Australia
Department of Environment Regulation

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Plan 5242/3c



LEGEND

- | | |
|-----------------------------|------------------------------|
| Clearing Instruments | Local Government Authorities |
| Areas Subject to Conditions | |
| Road Centrelines | |



Scale 1:15000
(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 16/10/14

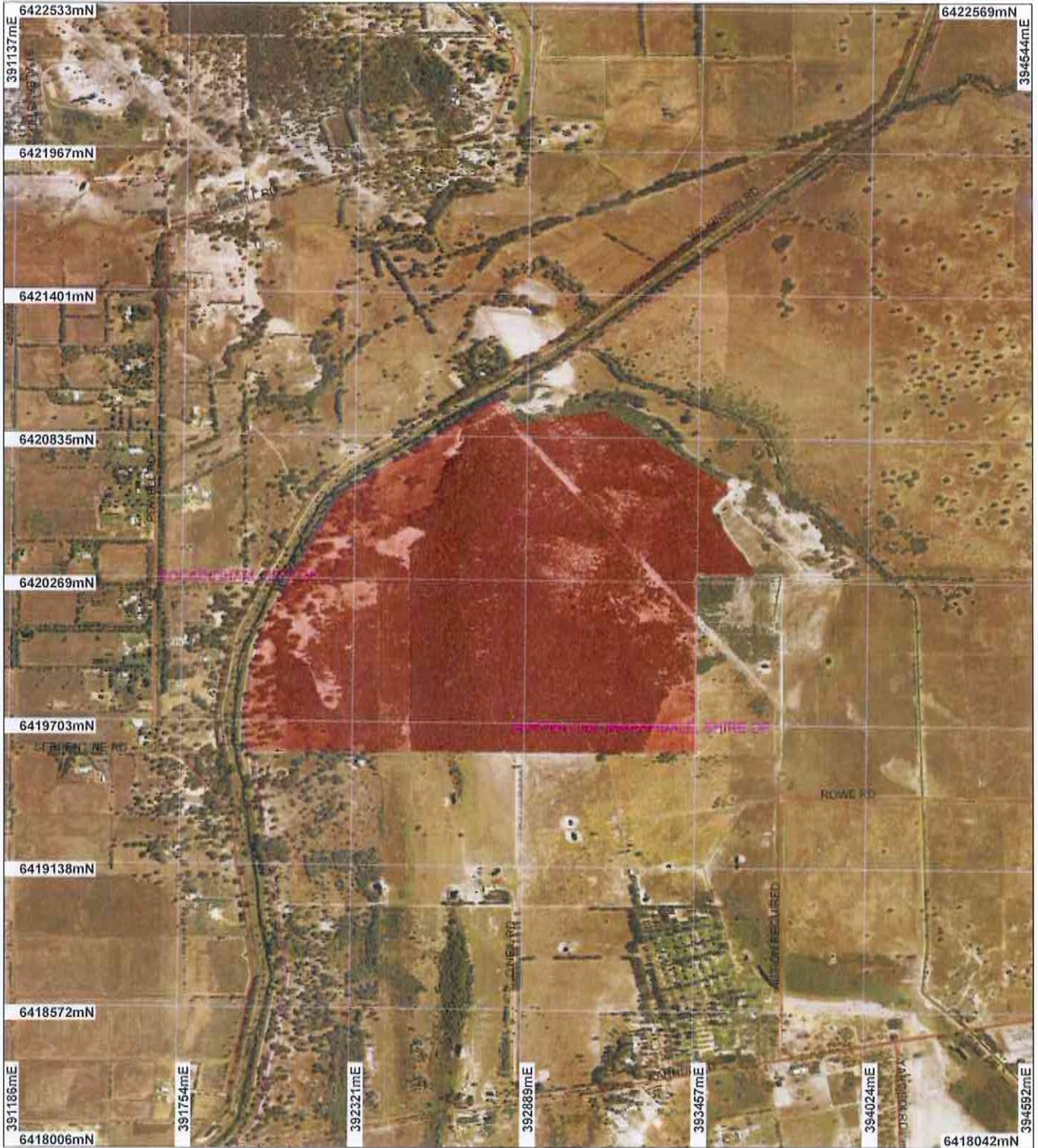
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Government of Western Australia
Department of Environment Regulation

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Plan 5242/3d



LEGEND

Clearing Instruments

- Areas Subject to Conditions
- Road Centrelines

- Local Government Authorities



Scale 1:20000

(Approximate when reproduced at A4)

Geocentric Datum Australia 1994

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Date 16/10/14

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Government of Western Australia
Department of Environment Regulation

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1. Application details

1.1. Permit application details

Permit application No.: 5242/3
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: Commissioner of Main Roads Western Australia

1.3. Property details

Property:

- LOT 07 ON PLAN 2302 (KEWDALE 6105)
- LOT 10 ON PLAN 2302 (FORRESTFIELD 6058)
- LOT 1002 ON PLAN 31502 (FORRESTFIELD 6058)
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 LOT 806 ON PLAN 49537 (WATTLE GROVE 6107)
 LOT 85 ON PLAN 7067 (KEWDALE 6105)
 LOT 86 ON PLAN 7067 (WATTLE GROVE 6107)
 LOT 87 ON PLAN 7067 (WATTLE GROVE 6107)
 LOT 88 ON PLAN 7067 (WATTLE GROVE 6107)
 LOT 9 ON PLAN 2302 (FORRESTFIELD 6058)
 LOT 9005 ON PLAN 39975 (FORRESTFIELD 6058)
 LOT 9947 ON PLAN 183309 (FORRESTFIELD 6058)
 ROAD RESERVE (HIGH WYCOMBE 6057)
 ROAD RESERVE (MAIDA VALE 6057)
 ROAD RESERVES (ASCOT 6104)
 ROAD RESERVES (BELMONT 6105)
 ROAD RESERVES (CLOVERDALE 6105)
 ROAD RESERVES (FORRESTFIELD 6058)
 ROAD RESERVES (KEWDALE 6105)
 ROAD RESERVES (PERTH AIRPORT 6105)
 ROAD RESERVES (REDCLIFFE 6104)
 ROAD RESERVES (WATTLE GROVE 6107)

Local Government Area:

City of Belmont; Shire of Kalamunda

Colloquial name:

Gateway WA Stage 1 (Perth Airport and Freight Access Project)

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
114.85		Mechanical Removal	Road construction or maintenance

1.5. Decision on application

Decision on Permit Application:	Grant
Decision Date:	16 October 2014

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
<u>Beard Vegetation Association (Shepherd et al., 2001):</u> 1001 - Medium very sparse woodland; jarrah, with low woodland; banksia & casuarina 1018 - Mosaic: Medium forest; jarrah-marri / Low woodland; banksia / Low forest; teatree / Low woodland; Casuarina obesa 1009 - Medium woodland; marri & river gum 968 - Medium woodland; jarrah, marri & wandoo <u>Hedde Vegetation Complex (Hedde et al., 1980):</u> Bassendean Complex-Central and South - Vegetation ranges from woodland of Eucalyptus marginata (Jarrah) - Allocasuarina fraseriana (Sheoak) - Banksia species to low woodland of Melaleuca species, and sedgelands on the moister sites. This area includes the transition of Eucalyptus marginata (Jarrah) to Eucalyptus todtiana (Pricklybark) in the vicinity of Perth	Gateway WA Stage 1 (Perth Airport and Freight Access Project)	Excellent: Vegetation structure intact; disturbance affecting individual species, weeds non-aggressive (Keighery 1994) To Completely Degraded: No longer intact; completely/almost completely without native species (Keighery, 1994)	The amended application is to clear an additional 11.85 hectares of native vegetation for an upgrade to the Roe Highway and Berkshire Road intersection to an interchange. This is in addition to the clearing of 103 hectares of native vegetation on various properties and road reserves under State jurisdiction, for construction associated with Stage 1 of the Gateway WA project (Perth Airport and Freight Access Project). Main Roads Western Australia (MRWA) intends to upgrade the major public arterial road network around Perth Airport. The Gateway WA Stage 1 project largely focusses on road and infrastructure upgrades along Tonkin Highway between Great Eastern Highway and Roe Highway, as well as part of Leach Highway from Orrong Road to the Perth Airport. The Roe Highway and Berkshire Road intersection is the next major intersection on Roe Highway north of Tonkin Highway. A level 2 flora and vegetation assessment identified fourteen vegetation types within the original footprint area (Gateway Vision, 2012). Six vegetation types were identified in the Roe Highway and Berkshire Road interchange area (Gateway WA, 2014a).

Southern River Complex - Open woodland of *Corymbia calophylla* (Marri) - *Eucalyptus marginata* (Jarrah) - *Banksia* species with fringing woodland of *Eucalyptus rudis* (Flooded Gum) - *Melaleuca raphiophylla* (Swamp Paperbark) along creek beds.

Forrestfield Complex - Vegetation ranges from open forest of *Corymbia calophylla* (Marri) - *Eucalyptus wandoo* (Wandoo) - *Eucalyptus marginata* (Jarrah) to open forest of *Eucalyptus marginata* (Jarrah) - *Corymbia calophylla* (Marri) - *Allocasuarina fraseriana* (Sheoak) - *Banksia* species. Fringing woodland of *Eucalyptus rudis* (Flooded Gum) in the gullies that dissect this landform.

Mattiske Vegetation Complex (Mattiske & Havel, 1998):

Forrestfield Complex - Mosaic of open forest of *Corymbia calophylla*-*Eucalyptus wandoo*-*Eucalyptus marginata* subsp. *elegantella* and open forest of *Eucalyptus marginata* subsp. *marginata* (Jarrah).

It is estimated that approximately 50 per cent of the 114.85 hectares of native vegetation the subject of the amended application is in good (Keighery, 1994) or better condition.

Vegetation condition was determined through a site visit conducted by the former Department of Environment and Conservation (DEC) on 22 October 2012 (DEC, 2012), and biological survey information provided as supporting documentation with the applications (Gateway Vision, 2012; Gateway WA, 2014a).

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 seriously at variance to this Principle

The amended application is to clear an additional 11.85 hectares of native vegetation (114.85 hectares total) for construction of the Roe Highway and Berkshire Road intersection to an interchange, hereafter referred to as the Roe Berkshire interchange. The previous assessment against the clearing principles, as documented in the decision report for clearing permit CPS 5242/2, has been updated based on the amended application area which includes both the Gateway WA Stage 1 application area and the Roe Berkshire interchange application area. The Gateway WA Stage 1 application area includes a number of major interchanges including the Tonkin Highway and Boud Avenue interchange, the Tonkin Highway and Leach Highway interchange and the Tonkin Highway and Roe Highway interchange. Hereafter these interchanges are referred to as the Tonkin Boud interchange, Tonkin Leach interchange and Tonkin Roe interchange respectively.

A level 2 flora and vegetation survey undertaken in 2010 and 2011 for the Gateway WA Stage 1 application recorded 261 native flora, including rare and priority species, and 43 introduced (weed) species (Gateway Vision, 2011). Fourteen vegetation types were identified in the Gateway WA Stage 1 application area (Gateway Vision, 2012).

Flora and vegetation surveys undertaken in 2008 and 2014 for the Roe Berkshire interchange application recorded 104 naturally occurring native flora, including one rare and one priority species, and 72 introduced (weed) species. Six vegetation types were identified in the Roe Berkshire interchange application area (Gateway WA, 2014a).

It is estimated that approximately 50 per cent of the 114.85 hectares of native vegetation the subject of the amended application is in good (Keighery, 1994) or better condition.

The majority of vegetation in the vicinity of the Tonkin Roe and Roe Berkshire interchanges supports rare and priority flora, is significant habitat for fauna of conservation significance (particularly black cockatoos and quenda) and is mapped as Conservation Category Wetland (CCW) and Resource Enhancement Wetland (REW). This area also contains four different threatened ecological communities (TECs) and may contain a Priority 3 ecological community (PEC) being floristic community type (FCT) 21c (Low lying *Banksia attenuata* woodlands or shrublands). A Bush Forever Area (BFA) also extends into the amended application area at this location (BFA 319).

A hybrid of the one rare flora species identified in the amended application area was collected from the southeast side of the Tonkin Roe interchange in 2005. This is one of three locations of the hybrid, all of which are within 5 kilometres of the amended application area. The southeast side of the Tonkin Roe interchange supports the largest stand of the hybrid (11 plants). The other two locations of the hybrid have very low numbers, with plants in one of the locations having declined substantially over the past decade. This hybrid is considered to be very important from a scientific perspective as an evolutionary link and is the only known hybrid in existence for the genus. The distribution of the hybrid suggests that they are continually produced, but don't spread. There appears to be inter-grades of the hybrid, which means it is likely that they produce some seed, possibly of lower viability, however this has not been confirmed. The hybrid is not listed as rare flora under the *Wildlife Conservation Act 1950*.

Vegetation condition mapping of the amended application area indicates the majority of the (approximately) 13 hectares of vegetation on the eastern side of the Tonkin Leach interchange is in good or better (Keighery,

1994) condition, including a small area in excellent (Keighery, 1994) condition. This area is predominantly Banksia woodland type vegetation and is identified as core black cockatoo feeding habitat, also containing two possible roost sites and numerous possible breeding trees (Gateway Vision, 2012). Signs of foraging on cones of Banksia trees were recorded within the amended application area during a site visit by DEC on 22 October 2012 (DEC, 2012). This vegetation is also part of BFA 386 - Perth Airport and Adjacent Bushland and is mapped as a CCW and REW. Analysis of quadrat data found 3 of the 5 quadrats surveyed in this area showed affinities with the Priority 3 PEC FCT 21c.

Significant black cockatoo feeding habitat and possible nesting trees also occur on the eastern side of Tonkin Highway in the vicinity of the proposed Tonkin Boud interchange (Gateway Vision, 2012).

The amended application is in an urban area and approximately 90 to 95 per cent of the local area (10 kilometre radius) is cleared for residential, industrial and airport purposes. The vegetation under application is significant as part of an ecological linkage in an extensively cleared landscape.

Considering the above, the vegetation under application in the vicinity of the Tonkin Leach, Tonkin Roe and Roe Berkshire interchanges comprises high biological diversity and very high conservation values. In particular, the vegetation between the Tonkin Roe and Roe Berkshire interchanges is of extremely high conservation value. The proposed clearing of 114.85 hectares is seriously at variance to this principle.

Appropriate management and a strategy to offset the proposed clearing may assist in mitigating unavoidable impacts.

A Construction Environmental Management Plan (CEMP) that includes commitments to minimise impacts from the project has previously been provided and approved under CPS 5242/2. An updated version of the CEMP has been provided to include the Roe Berkshire interchange.

A monitoring program in relation to monitoring of indirect impacts to wetlands and TECs in the vicinity of the Tonkin Roe and Roe Berkshire interchanges has previously been provided and approved.

A number of offsets have already been approved including:

- Funding for the acquisition of Lot 300 on Plan 77559, to be ceded to the Department of Parks and Wildlife (Parks and Wildlife) for conservation. Lot 300 on Plan 77559 contains approximately 154 hectares of native vegetation supporting 154 hectares of black cockatoo feeding habitat, 27 hectares of potential black cockatoo breeding habitat, 114 hectares of CCW, and 18.5 hectares of REW. It is also reported to be approximately 50 per cent covered by the Priority 3 PEC FCT 21c and contain potential habitat for rare and priority flora species (Gateway WA, 2013). Approximately 12 hectares of native vegetation on Lot 300 on Plan 77559 is subject to ongoing maintenance activities associated with the Dampier to Bunbury Natural Gas Pipeline and a power line.
- Rehabilitation of Pioneer Park (BFA 440), which is adjacent to the amended application area and managed by the Shire of Kalamunda. Pioneer Park contains the impacted rare flora species and an occurrence of TEC FCT 20a. The objective of the rehabilitation is to enhance and re-establish approximately 3 hectares of vegetation.
- Establishment of 120 plants of the impacted rare flora in Pioneer Park (BFA 440) and/or in other areas as agreed with the Department of Environment Regulation (DER).
- Trial relocation of 10 impacted rare flora plants during the construction process to a secure area in suitable habitat.
- Ceding of Lot 30 on Plan 2302 to Parks and Wildlife for conservation. Lot 30 on Plan 2302 is located immediately adjacent to the Tonkin Roe interchange and contains one hectare of native vegetation. This area predominantly contains TEC FCT 02 but also includes a small transitional area of TEC FCT 20a.
- Acquisition of, or provision of \$2,665,600 to DER for the acquisition of, a combined total of 16.66 hectares of TECs FCT 02, FCT 20a and FCT 3a.

An additional offset for the Roe Berkshire interchange will contribute to the mitigation of additional significant residual impacts to black cockatoo feeding habitat, habitat trees, quenda habitat, TECs, regionally significant vegetation, CCWs and BFAs.

Methodology

References:

DEC, 2012
Gateway Vision, 2011
Gateway Vision, 2012
Gateway WA, 2013
Gateway WA, 2014a
Keighery, 1994

GIS Databases:

- Bush Forever
- DEC Managed Lands
- Geomorphic Wetlands (Mgt Categories), Swan Coastal Plain
- NLWRA, Current Extent of Native Vegetation
- SAC Biodatasets (Accessed 09/14)

(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 seriously at variance to this Principle

There are records of numerous fauna species of conservation significance within the local area (10 kilometre radius) (DPaW, 2007-). This includes Carnaby's cockatoo (*Calyptorhynchus latirostris*), forest red-tailed black cockatoo (*Calyptorhynchus banksii* subsp. *naso*), Baudin's cockatoo (*Calyptorhynchus baudinii*) and quenda (*Isodon obesulus* subsp. *fusciventer*).

Carnaby's cockatoo is listed as rare or likely to become extinct under the Western Australia *Wildlife Conservation Act 1950* (WC Act) and Endangered under the (Commonwealth) *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). This species nests in large hollows of eucalyptus trees and forages on the seeds, nuts and flowers of a large variety of plants including Proteaceous species (Banksia, Hakea, Grevillea), as well as Allocasuarina and Eucalyptus species, *Corymbia calophylla* and a range of introduced species (Shah, 2006; Valentine and Stock, 2008). One of the major threats to Carnaby's cockatoo is the accumulative clearing of feeding habitat on the Swan Coastal Plain (Cale, 2003). Given this, all feeding habitat on the Swan Coastal Plain is considered significant. Any clearing of cockatoo feeding habitat on the Swan Coastal Plain will contribute to the cumulative loss and fragmentation of remaining habitat and poses a significant threat to the long term survival of Carnaby's cockatoo.

The vegetation under application includes some large and consolidated areas of preferred feeding species for Carnaby's cockatoo, particularly around the proposed Tonkin Leach, Tonkin Roe and Roe Berkshire interchanges. Carnaby's cockatoo feeding habitat and possible breeding trees also occur on the eastern side of Tonkin Highway in the vicinity of the proposed Tonkin Boud interchange (Gateway Vision, 2012).

Signs of foraging on cones of Banksia trees were recorded within the amended application area during a site visit by DEC on 22 October 2012 (DEC, 2012). Recent evidence of foraging (chewed Marri nuts) was also recorded during surveys of the Roe Berkshire interchange area (Gateway WA, 2014a). Approximately 50 hectares of the vegetation under application is mapped as Carnaby's cockatoo feeding habitat, including 10 hectares within the Roe Berkshire interchange area.

The amended application area intersects the buffers of both confirmed and unconfirmed Carnaby's cockatoo breeding and roosting areas. A number of large hollow-bearing, and potentially hollow-bearing trees occur within the amended application area (DEC, 2012). 181 trees with the potential to provide breeding habitat for black cockatoos were identified in the amended application area (Gateway Vision, 2012). This includes an additional 80 trees within the Roe Berkshire interchange area (Gateway WA, 2014a). All of these trees may also be suitable as potential breeding habitat for a range of other native fauna.

Forest red-tailed black cockatoo and Baudin's cockatoo are listed as rare or likely to become extinct under the WC Act and Vulnerable under the EPBC Act. Forest red-tailed black cockatoo is known to utilise the vegetation under application to feed (Gateway Vision, 2012) and may also breed in the area (SEWPAC, 2012). Baudin's cockatoo is considered likely to utilise the vegetation under application to feed but the amended application area is outside the known breeding range of the species (Gateway WA, 2014a).

Wetland areas within and adjacent to the amended application area have been identified as important core habitat for quenda, which is a priority five (P5) species (Gateway Vision, 2012). In particular, the wetland area at the Tonkin Roe interchange which extends into parts of the Roe Berkshire interchange area has been recognised as providing large, consolidated areas of habitat for this species.

The amended application area includes some areas of high quality vegetation with high habitat values and relatively low levels of disturbance (DEC, 2012). While the majority of the roadside vegetation along Tonkin Highway is highly disturbed, consisting mainly of scattered patches of overstorey species (DEC, 2012), this vegetation retains significant value as habitat for birds, including black cockatoos.

The amended application is in an urban/industrial area and the local area (10 kilometre radius) is approximately 90 to 95 per cent cleared. The vegetation under application is significant as part of an ecological linkage, fauna refuge and wildlife corridor between remnants in an extensively cleared landscape.

Considering the above, the vegetation under application includes significant areas of core habitat for species of conservation significance, as well as supporting the maintenance of core habitat. The clearing of 114.85 hectares of native vegetation is seriously at variance to this principle.

Appropriate management and a strategy to offset the proposed clearing may assist in mitigating unavoidable impacts.

A CEMP that includes commitments to minimise impacts to terrestrial and protected fauna, in particular black cockatoos and quenda, has previously been provided and approved under CPS 5242/2. An updated version of the CEMP has been provided to include the Roe Berkshire interchange.

An offset has already been approved for the loss of up to 40 hectares of black cockatoo feeding habitat, 101 potential habitat trees and significant habitat for quenda. The offset includes funding of the acquisition of Lot 300 on Plan 77559, to be ceded to Parks and Wildlife for conservation. Lot 300 on Plan 77559 contains

approximately 154 hectares of native vegetation supporting 154 hectares of black cockatoo feeding habitat, 27 hectares of potential black cockatoo breeding habitat, 114 hectares of CCW, and 18.5 hectares of REW (Gateway WA, 2013). Approximately 12 hectares of native vegetation on Lot 300 on Plan 77559 is subject to ongoing maintenance activities associated with the Dampier to Bunbury Natural Gas Pipeline and a power line.

A number of offsets have also already been approved for the loss of TECs. These include:

- Ceding of Lot 30 on Plan 2302 to Parks and Wildlife for conservation. Lot 30 on Plan 2302 is located immediately adjacent to the Roe Tonkin interchange and contains one hectare of native vegetation. This area supports black cockatoo feeding habitat and suitable quenda habitat.
- Rehabilitation of a 3 hectare portion of Pioneer Park (BFA 440). Pioneer Park is located adjacent to the proposed clearing area near the Tonkin Roe and Roe Berkshire interchanges. This area supports black cockatoo feeding habitat and suitable quenda habitat.
- Acquisition of, or provision of \$2,665,600 to DER for the acquisition of, a combined total of 16.66 hectares of TECs FCT 02, FCT 20a and FCT 3a. These areas are expected to support black cockatoo feeding and breeding habitat.

An additional offset for the Roe Berkshire interchange will contribute to the mitigation of additional significant residual impacts to black cockatoo feeding habitat, habitat trees and quenda habitat.

Methodology

References:

Cale, 2003
DPaW, 2007-
DEC, 2012
Gateway Vision, 2012
Gateway WA, 2013
Gateway WA, 2014a
SEWPAC, 2012
Shah, 2006
Valentine and Stock, 2008

GIS Databases:

- Carnaby's Cockatoo Roost Areas (Buffered) Confirmed
- Carnaby's Cockatoo Roost Areas (Buffered) Unconfirmed
- Carnaby's Cockatoo Breeding Areas (Buffered) Confirmed
- Carnaby's Cockatoo Breeding Areas (Buffered) Unconfirmed
- Carnaby's Cockatoo Feeding Areas SCP Unconfirmed
- NLWRA, Current Extent of Native Vegetation

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

Comments

Proposal is seriously at variance to this Principle

GHD conducted a vegetation and flora survey of the Roe Berkshire interchange area in October 2008 and January 2014. The presence of one species of rare flora was confirmed (Gateway WA, 2014a). This species was also recorded from the Gateway WA Stage 1 application area. No other rare flora species were recorded within the amended application area.

The rare flora within the amended application area is listed as Vulnerable under the EPBC Act and is currently known from 31 populations and over 10,500 individuals in Western Australia. It has a restricted range of approximately 14 kilometres along the eastern edge of the Swan Coastal Plain between High Wycombe and Martin in the Perth metropolitan area. The main threats to this species are urban development and the degradation of small bushland remnants in which it occurs (primarily on private property). A number of populations/plants of this species are in degraded condition and subject to threatening processes. These populations/plants do not contribute as effectively to the conservation of the species in comparison to larger populations in better condition vegetation. Several populations occur on land considered more secure including Shire land managed as parkland reserves and land purchased by the Government to be managed as conservation estate.

Surveys conducted by the applicant recorded 148 plants of the rare flora species within the Roe Berkshire interchange area (Gateway WA, 2014a). An additional 174 plants of this species were recorded within the remainder of the application area including an area that supports one of the largest and best condition populations (Gateway Vision, 2012). The application area is of high importance for the conservation of the species.

The applicant previously calculated that a maximum of 62 plants may be directly impacted by the proposed clearing for Stage 1 of the Gateway WA project (MRWA, 2012b). The applicant has advised that clearing for Stage 1 has been completed and only 25 plants were removed (Gateway WA, 2014b). However, an additional 5 plants could not be re-located prior to clearing and the area of native vegetation directly associated with these plants has now been cleared.

Of the 148 plants recorded within the Roe Berkshire interchange area, the applicant has advised that 28 will require clearing at this stage. Therefore, when combined with works completed to date, clearing for the Roe Berkshire interchange will result in the loss of native vegetation containing up to a total of 58 plants.

Given the application is for a permit to clear all vegetation within the footprint area, up to 322 plants may be cleared in total. The proposed clearing of 114.85 hectares of native vegetation is seriously at variance to this principle. Appropriate management and a strategy to offset the proposed clearing may assist in mitigating unavoidable impacts.

A CEMP that includes commitments to minimise impacts to rare flora has previously been provided and approved under CPS 5242/2. An updated version of the CEMP has been provided to include the Roe Berkshire interchange.

A number of offsets have already been approved for the clearing of vegetation in association with 62 rare flora plants. These include:

- Rehabilitation of 3 hectares of vegetation within Pioneer Park (BFA 440), which is adjacent to the amended application area and managed by the Shire of Kalamunda. Pioneer Park contains the impacted rare flora species and the rehabilitation will increase and improve habitat for this species.
- Establishment of 120 plants of the impacted rare flora in Pioneer Park (BFA 440) and/or in other areas as agreed with DER.
- Trial relocation of 10 impacted rare flora plants.

As the applicant does not require the clearing of more than 62 rare flora plants for the amended application, no additional offset is considered necessary for impacts to rare flora at this stage.

Methodology

References:

Gateway Vision, 2012
Gateway WA, 2014a
Gateway WA, 2014b
MRWA, 2012b

GIS Databases:

- SAC Biodatasets (Accessed 09/14)

(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 seriously at variance to this Principle

There are numerous TECs in the local area (10 kilometre radius), four of which are mapped within the amended application area. This includes:

- FCT 02 (Southern wet shrublands, Swan Coastal Plain) which is listed as an Endangered TEC in Western Australia. The mapped occurrence of this TEC occurs near the Tonkin Roe interchange. A total of 8.9 hectares of this TEC is mapped within or in close proximity to the amended application area.
- FCT 20a (Banksia attenuata woodland over species rich dense shrublands) which is listed as Endangered in Western Australia. The mapped occurrences of this TEC occur on both sides of Roe Highway between the Tonkin Roe interchange and the north eastern most extent of the Roe Berkshire interchange area. A total of 72.9 hectares of this TEC is mapped within or in close proximity to the amended application area.
- FCT 3a (Corymbia calophylla - Kingia australis woodlands on heavy soils) which is listed as Critically Endangered in Western Australia and Endangered under the EPBC Act. The mapped occurrences of this TEC occur on both sides of Roe Highway between the Tonkin Roe and Roe Berkshire interchanges. A total of 11 hectares of this TEC is mapped within or in close proximity to the amended application area.
- FCT 20b (Banksia attenuata and/or Eucalyptus marginata woodlands of the eastern side of the Swan Coastal Plain) which is listed as an Endangered TEC in Western Australia. The mapped occurrence of this TEC occurs at the Roe Berkshire interchange. The total extent of this TEC (0.3 hectares) occurs within the amended application area.

FCT 02 is known from seven small bushland remnants between Busselton and Forrestfield and covers a total area of approximately 42 hectares. The largest known occurrence of the FCT 02 TEC is at Ambergate near Busselton and covers about 9.9 hectares. The next closest occurrence is at Byford, then Mundijong. Additional surveys undertaken over the past few years have shown that it is unlikely that further intact examples of this community type will be found. Up to 3.8 hectares of TEC FCT 02 in mainly excellent (Keighery, 1994) condition may be cleared for the proposed works. This represents approximately 9 per cent of the total known area of this TEC and this is considered to represent a significant impact. Works proposed at the site are likely to disrupt or change the hydrology of the area, and thereby alter the water regime on which this community relies. FCT 02 occurs on seasonally inundated sandy clay soils and is most likely to have some level of dependence on groundwater. No additional clearing of this TEC is required for the Roe Berkshire interchange.

FCT 20a is known from 44 locations totalling approximately 560 hectares between Chittering and Orange Grove. Up to 4.9 hectares of TEC FCT 20a may be cleared for the proposed works including 3.2 hectares for the Roe Berkshire interchange. This includes an additional 2 hectares of vegetation not previously mapped as TEC but identified in surveys by the applicant as having close affinities to FCT 20a (Gateway WA, 2014a). This

area is located on the north-eastern side of the Roe Berkshire interchange and was assessed as being in very good to excellent (Keighery, 1994) condition. The clearing of 4.9 hectares of FCT 20a represents approximately 0.9 per cent of the total known area of this TEC. This is an increase of 0.6 per cent attributable to clearing for the Roe Berkshire interchange.

FCT 3a is known from 26 locations totalling 192 hectares between Chittering and Capel River. Up to 3.28 hectares of the TEC may be cleared for the proposed works including 1.35 hectares for the Roe Berkshire interchange. This represents approximately 1.7 per cent of the total area of the community. This is an increase of 0.7 per cent attributable to clearing for the Roe Berkshire interchange.

FCT 20b is known from 29 locations totalling 284 hectares between Harvey and Landsdale. Up to 0.3 hectares of the TEC may be cleared for the proposed works, all for the Roe Berkshire interchange. This represents approximately 0.1 per cent of the total area of the community.

Surveys of the Roe Berkshire interchange area also identified areas of vegetation that appear to be a gradient between FCT 20a and FCT 3a (Gateway WA, 2014a). Approximately 0.16 hectares of the amended application area has been mapped as a possible transition between FCT 20a and FCT 3a.

Edge effects such as encroachment of weeds into adjacent bushland and altered hydrology are likely to be substantial as a consequence of the proposed clearing. It was previously calculated that the proposed clearing may have indirect impacts to a combined total of 2 hectares of TECs FCT 02, FCT 20a and FCT 3a. Given the proposed clearing area for the Roe Berkshire interchange intersects additional areas of TECs, further indirect impacts are expected. It is estimated that additional indirect impacts to FCT 20a and FCT 3a totalling 0.7 hectares may occur.

Given the above the proposed clearing of 114.85 hectares is seriously at variance to this principle.

Appropriate management and a strategy to offset the proposed clearing may assist in mitigating unavoidable impacts.

A CEMP that includes commitments to minimise impacts to TECs has previously been provided and approved under CPS 5242/2. An updated version of the CEMP has been provided to include the Roe Berkshire interchange.

A monitoring program in relation to monitoring of indirect impacts to TECs in the vicinity of the Tonkin Roe and Roe Berkshire interchanges has previously been provided and approved.

A number of offsets have already been approved for the loss of TECs. These include:

- Ceding of Lot 30 on Plan 2302 to Parks and Wildlife for conservation. Lot 30 on Plan 2302 is located immediately adjacent to the Tonkin Roe interchange and contains one hectare of native vegetation. This area predominantly contains FCT 02 but also includes a small transitional area of FCT 20a.
- Rehabilitation of a 3 hectare portion of Pioneer Park (BFA 440) including 1.2 hectares of FCT 20a. Pioneer Park is located adjacent to the proposed clearing area near the Tonkin Roe and Roe Berkshire interchanges.
- Acquisition of, or provision of \$2,665,600 to DER for the acquisition of, a combined total of 16.66 hectares of TECs FCT 02, FCT 20a and FCT 3a.

An additional offset for the Roe Berkshire interchange will contribute to the mitigation of additional significant residual impacts to TECs.

Methodology References:
Gateway WA, 2014a
Keighery, 1994

GIS Databases:
- SAC Biodatasets (Accessed 09/14)

(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 seriously at variance to this Principle

The National Objectives and Targets for Biodiversity Conservation include a target that prevents the clearance of ecological communities with an extent below 30 per cent of that present pre-European settlement (Commonwealth of Australia, 2001). The Roe Berkshire interchange area is mapped as Beard vegetation associations 1001 and 1009, and Heddle vegetation complexes Southern River and Forrestfield. A portion of the Roe Berkshire interchange area is also mapped as Mattiske vegetation complex Forrestfield. All of these vegetation associations/complexes, and those mapped within the Gateway WA Stage 1 application area, are below the State Government's target of 30 per cent retention.

The Environmental Protection Authority (EPA) recognises the Perth metropolitan region as a constrained area, which provides for the reduction of vegetation complexes to a minimum of 10 per cent of the pre-European extent (EPA, 2006). Beard vegetation association 968 is below this threshold, with 7 per cent remaining. In addition,

Beard vegetation associations 1018 and 1009 are poorly reserved, with 4 and 2 per cent of their remaining extent in land managed by Parks and Wildlife respectively (equating to 102 and 64 hectares respectively).

The amended application area is in an urban area which is approximately 90 to 95 per cent cleared within a 10 kilometre radius.

The vegetation within the amended application area is significant as part of an ecological linkage between remnants in an extensively cleared landscape. The vegetation holds high environmental values including significant fauna habitat, biodiversity, rare flora, PECs and TECs as well as high value wetlands. In particular, the areas in the vicinity of the Tonkin Leach, Tonkin Roe and Roe Berkshire interchanges contain large, consolidated areas of high value vegetation.

Considering the above, the vegetation proposed to be cleared is of regional significance and is significant as remnant native vegetation in an extensively cleared area. The proposed clearing of 114.85 hectares of native vegetation is seriously at variance to this principle. Appropriate management and a strategy to offset the proposed clearing may assist in mitigating unavoidable impacts.

A CEMP that includes commitments to minimise impacts to vegetation has previously been provided and approved under CPS 5242/2. An updated version of the CEMP has been provided to include the Roe Berkshire interchange.

An offset has already been approved in relation to the loss of 103 hectares of regionally significant native vegetation. The offset includes funding of the acquisition of Lot 300 on Plan 77559, to be ceded to Parks and Wildlife for conservation. Lot 300 on Plan 77559 contains approximately 154 hectares of native vegetation, including areas mapped as Bassendean Complex-Central and South, and Beard vegetation association 968. Approximately 12 hectares of native vegetation on Lot 300 on Plan 77559 is subject to ongoing maintenance activities associated with the Dampier to Bunbury Natural Gas Pipeline and a power line.

A number of additional offsets have already been approved for the loss of TECs and rare flora. These offsets include the acquisition of a total of 17.66 hectares of native vegetation containing TECs and rehabilitation of 3 hectares of Pioneer Park (BFA 440). These areas contain, or are expected to contain, regionally significant vegetation.

An additional offset for the Roe Berkshire interchange will contribute to the mitigation of additional significant residual impacts to regionally significant vegetation.

	Pre-European Extent (ha)	Current Extent (ha)	Current Extent Remaining (%)	Current Extent in Parks and Wildlife Managed Lands (%)
IBRA Bioregion*				
Swan Coastal Plain	1,501,222	586,975	39	36
Shire*				
City of Belmont	3,939	426	11	0
Shire of Kalamunda	32,388	23,614	73	85
Beard Vegetation Association in Bioregion*				
1018	14,059	2,612	19	4 (102 ha)
1001	57,410	14,152	25	6 (801 ha)
1009	18,185	2,974	16	2 (64 ha)
968	136,188	9,796	7	17 (1,620 ha)
Hedde Vegetation Complex				
Bassendean Complex-Central and South	87,318	24,610	28	3 (3,012 ha)
Southern River Complex	57,171	12,059	21	2 (945 ha)
Forrestfield Complex	20,169	2,205	11	1 (287 ha)
Mattiske Vegetation Complex				
Forrestfield Complex	3,708	607	16	6 (230 ha)

* Government of Western Australia, 2013

Methodology

References:

Commonwealth of Australia, 2001
 EPA, 2006
 Government of Western Australia, 2013

GIS Databases:

- Hedde Vegetation Complexes
- Mattiske Vegetation Complexes
- NLWRA, Current Extent of Native Vegetation
- Pre-European 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

Proposal is at variance to this Principle

The Roe Berkshire interchange area intersects a palusplain wetland. Large portions of this wetland have been highly modified but less disturbed areas with significant conservation value remain. Approximately 2.7 hectares of the wetland occurs within the Roe Berkshire interchange area. Approximately 2.3 hectares is mapped as a Multiple Use Wetland (MUW) and approximately 0.4 hectares is mapped as a CCW. A survey of the Roe Berkshire interchange area did not identify vegetation congruent with wetland species (Gateway WA, 2014a). However, the vegetation is likely to be growing in association with an environment associated with a wetland.

The Roe Berkshire interchange area is intersected by Crumpet Creek. Crumpet Creek has been highly modified on the eastern side of Roe Highway, now flowing through a man-made drainage channel before passing under Roe Highway through two large culverts. On the western side of Roe Highway the creek flows through the aforementioned palusplain CCW before reaching a drain running parallel with Dundas Rd. Clearing for the Roe Berkshire interchange has the potential to result in impacts to Crumpet Creek through the loss of approximately 0.4 hectares of an associated CCW.

The Gateway WA Stage 1 application area includes additional areas of palusplain and dampland wetlands.

Approximately 14 hectares of native vegetation located on the eastern side of Tonkin Highway (mostly at the Tonkin Leach interchange) is mapped as a dampland wetland. Approximately 4.4 hectares of this area is mapped as a CCW, 5.9 hectares is mapped as a REW, and the remainder is mapped as a MUW.

Approximately 31 hectares of native vegetation located at the Tonkin Roe interchange is mapped as a palusplain wetland. Approximately 8.7 hectares of this area is mapped as a CCW, 13.4 hectares is mapped as a REW, and the remainder is mapped as a MUW.

Dampland and palusplain wetlands are seasonally waterlogged types of wetland. Seasonally waterlogged wetlands often have a higher plant and animal species richness than permanent wetlands. Seasonally waterlogged wetlands, however, are being lost at a faster rate than other wetland types due to their less obvious boundaries and the traditional land development approach.

CCWs support a high level of attributes and functions and are the highest priority for protection. There should be no further loss or degradation of CCWs and their protection also requires the retention of an adequate buffer (Government of Western Australia, 1997). REWs are considered priority wetlands which may have been partially modified but still retain substantial attributes and functions, with the potential for restoration towards CCWs and should be retained and managed where possible. MUWs are wetlands with few remaining important attributes and functions.

The proposed clearing may impact up to 32.8 hectares of native vegetation mapped as either CCW (13.5 hectares) or REW (19.3 hectares). The proposed clearing of wetland vegetation will result in the loss of regionally significant wetland vegetation in good to excellent (Keighery, 1994) condition, will increase fragmentation of wetlands, and will increase edge effects on wetland areas due to loss of buffers. The wetland areas located on the western side of Roe Highway between the Tonkin and Berkshire Rd interchanges are likely to have the highest wetland values with portions of these areas mapped as TECs.

The proposed clearing will result in cumulative loss of representative wetland areas already lost on the Swan Coastal Plain. Hydrological change to wetland areas from alteration of surface flows associated with road design will also increase secondary impacts to the remaining wetland areas (e.g. batters and drainage infrastructure).

The environmental values of the CCW and REW areas are significant and the proposed clearing is at variance with this principle. Appropriate management and a strategy to offset the proposed clearing may assist in mitigating unavoidable impacts.

A CEMP that includes commitments to minimise impacts to wetlands has previously been provided and approved under CPS 5242/2. An updated version of the CEMP has been provided to include the Roe Berkshire interchange.

A monitoring program in relation to monitoring of indirect impacts to wetlands in the vicinity of the Tonkin Roe and Roe Berkshire interchanges has previously been provided and approved.

An offset has already been approved for the loss of up to 34 hectares of wetland vegetation. The offset includes funding of the acquisition of Lot 300 on Plan 77559, to be ceded to Parks and Wildlife for conservation. Lot 300 on Plan 77559 contains approximately 154 hectares of native vegetation supporting 114 hectares of CCW and 18.5 hectares of REW (Gateway WA, 2013). Approximately 12 hectares of native vegetation on Lot 300 on Plan 77559 is subject to ongoing maintenance activities associated with the Dampier to Bunbury Natural Gas Pipeline and a power line.

A number of offsets have also already been approved for the loss of TECs. One of these offsets involves the ceding of Lot 30 on Plan 2302 to Parks and Wildlife for conservation. Lot 30 on Plan 2302 is located immediately adjacent to the Tonkin Roe interchange and contains one hectare of native vegetation. This area is mapped as a REW.

An additional offset for the Roe Berkshire interchange will contribute to the mitigation of additional significant residual impacts to CCWs.

Methodology

References:

Gateway WA, 2013
Gateway WA, 2014a
Government of Western Australia, 1997
Keighery, 1994

GIS Databases:

- Geomorphic Wetlands (Mgt Categories), Swan Coastal Plain
- Hydrography, linear

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

Comments

Proposal is at variance to this Principle

The amended application area is in an area mapped as having groundwater salinity of 500 -1000mg/L. Salinity risk is mapped as low in this area.

The amended application area is located within the Bassendean and Southern River units of the Bassendean Dunes (Gateway Vision, 2012; Gateway WA, 2014a). The chief soils are described as leached sands, sometimes with clayey swamps (Northcote et al., 1960-68).

Land degradation risks typically associated with the removal of vegetation from sandy soils are nutrient export and erosion.

The amended application area is relatively flat, with topography of approximately 20-35 metres AHD. The majority of the amended application area is mapped as wetland (dampland and palusplain).

Considering the above, and the large amount of clearing proposed (114.85 hectares), the proposed clearing has a high risk of soil erosion and nutrient export and is at variance to this principle.

Appropriate soil, surface water and nutrient management practices will reduce these impacts.

The proponent has advised that any areas not required as part of the road infrastructure will be rehabilitated to ensure that land degradation of adjacent areas does not occur and that drainage design and suitable erosion controls will minimise potential degradation to surrounding land (Gateway Vision, 2012). A CEMP that includes commitments relating to minimising land degradation has previously been provided and approved. An updated version of the CEMP has been provided in relation to works at the Roe Berkshire interchange.

Methodology

References:

Gateway Vision, 2012
Gateway WA, 2014a
Northcote et al., 1960-68

GIS Databases:

- Groundwater Salinity, statewide
- Salinity Risk
- 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 at variance to this Principle

Approximately one hectare of the Roe Berkshire interchange area occurs within BFA 319. Approximately 0.2 hectares of the Roe Berkshire interchange area occurs within BFA 440, but this area is largely devoid of native vegetation.

Based on the above, the impacts of the amended application on BFAs are as follows:

- Loss of up to 12.29 hectares of the 629.5 hectare BFA 386 - Perth Airport and Adjacent Bushland. This area is on the eastern end of the proposed Tonkin Leach interchange area.
- Loss of up to 7.26 hectares of the 58.1 hectare BFA 319 - Dundas Road Bushland. This area is in the northeast corner of the Tonkin Roe interchange area and extends along the northern side of Roe Highway.

The clearing of an additional one hectare of native vegetation from BFA 319 represents an increased direct impact of 12.5 per cent from 10.8 per cent. The clearing for the Roe Berkshire interchange may also increase indirect impacts to BFA 319, BFA 440 and Crown Reserve 37997. Crown Reserve 37997 is a Class A Nature Reserve for the conservation of flora and fauna located adjacent to Roe Highway near the Tonkin Roe interchange.

Indirect impacts include edge effects such as encroachment of weeds into adjacent bushland and altered hydrology.

Considering the above, the proposed clearing is at variance to this principle.

Appropriate management and a strategy to offset the proposed clearing may assist in mitigating unavoidable impacts.

A CEMP that includes commitments to minimise impacts to vegetation and flora has previously been provided and approved under CPS 5242/2. An updated version of the CEMP has been provided to include the Roe Berkshire interchange.

A number of offsets have already been approved which help mitigate the loss of environmental values from BFAs 386 and 319. These include:

- Funding of the acquisition of Lot 300 on Plan 77559, to be ceded to Parks and Wildlife for conservation. Lot 300 on Plan 77559 contains approximately 154 hectares of native vegetation, the majority of which forms part of the 142 hectare BFA 372. Approximately 12 hectares of native vegetation on Lot 300 on Plan 77559 is subject to ongoing maintenance activities associated with the Dampier to Bunbury Natural Gas Pipeline and a power line.
- Ceding of Lot 30 on Plan 2302 (owned by Main Roads Western Australia) to Parks and Wildlife for conservation. Lot 30 on Plan 2302 is located immediately adjacent to the Tonkin Roe interchange and contains one hectare of native vegetation. This area forms part of BFA 319.
- Rehabilitation of Pioneer Park (BFA 440), which is adjacent to the application area and managed by the Shire of Kalamunda. Pioneer Park contains the impacted rare flora species and an occurrence of TEC FCT 20a. The objective of the rehabilitation is to enhance and re-establish approximately 3 hectares of vegetation to add additional areas of vegetation which generally match the TEC FCT 20a. It will also increase and improve habitat for the impacted rare flora species.

An additional offset for the Roe Berkshire interchange will contribute to the mitigation of additional significant residual impacts to BFAs.

Methodology GIS Databases:
- Bush Forever
- DEC Managed Lands

(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 at variance to this Principle

The Roe Berkshire interchange area is intersected by Crumpet Creek. Crumpet Creek has been highly modified on the eastern side of Roe Highway, now flowing through a man-made drainage channel before passing under Roe Highway through two large culverts. On the western side of Roe Highway the creek flows through a palusplain CCW before reaching a drain running parallel with Dundas Rd.

Several major drains occur within or cross the amended application area, particularly around the Tonkin Roe interchange. A large portion of the vegetation within the amended application area is associated with dampland and palusplain type wetlands. These are seasonally waterlogged types of wetlands.

The proposed clearing will result in cumulative loss of representative wetland areas already lost on the Swan Coastal Plain. The proposed clearing may impact up to 32.8 hectares of native vegetation mapped as either CCW (13.5 hectares) or REW (19.3 hectares).

Hydrological change to wetland areas from alteration of surface flows associated with the road design will also increase secondary impacts to the remaining wetland areas (e.g. batters and drainage infrastructure).

The chief soils mapped within the amended application area are described as leached sands, sometimes with clayey swamps (Northcote et al., 1960-68). Removal of vegetation from sandy soils poses a high risk of nutrient export and erosion.

Considering the above the proposed clearing is likely to result in increased sedimentation and eutrophication of surface water and is at variance to this principle.

A CEMP that includes commitments to minimise impacts to water quality has previously been provided and approved. An updated version of the CEMP has been provided in relation to works at the Roe Berkshire interchange.

Methodology References:
Northcote et al., 1960-68

GIS Databases:
- Geomorphic Wetlands (Mgt Categories), Swan Coastal Plain
- Hydrography, linear

(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 amended application area is located within the Bassendean and Southern River units of the Bassendean Dunes (Gateway Vision, 2012; Gateway WA, 2014a). The chief soils are described as leached sands, sometimes with clayey swamps (Northcote et al., 1960-68).

There are numerous constructed drains crossing the amended application area and water management infrastructure associated with the existing roads in the area.

The proponent has advised that runoff from proposed road development will be subject to detailed drainage management, in consultation with the Department of Water (Gateway Vision, 2012).

Considering the above, the proposed clearing is unlikely to increase or exacerbate the incident or intensity of flooding.

Methodology References:
Gateway Vision, 2012
Gateway WA, 2014a
Northcote et al., 1960-68

GIS Databases:
- Hydrography, linear
- Soils, Statewide

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

Comments

The clearing of 114.85 hectares of native vegetation is for the purpose of construction associated with Stage 1 of the Gateway WA project and an associated project being the construction of the Roe Berkshire interchange. The Gateway WA Stage 1 project is intended to upgrade the major public arterial road network around Perth Airport and forms part of a national infrastructure priority (Gateway Vision, 2012). Berkshire Road provides access to the suburb of Forrestfield to the east, and to a light industrial and commercial area to the west. The Roe Berkshire intersection supports a large amount of heavy vehicle traffic and construction of the interchange will ease congestion and improve the effectiveness of the Gateway WA Stage 1 project (Gateway WA, 2014b).

The Gateway WA Stage 1 project includes development within the adjacent Perth Airport land, which is under Commonwealth tenure. The applicant advised that an additional 36 hectares of clearing is expected to be required on Commonwealth land for Stage 1 of the project (MRWA, 2012a).

The Roe Berkshire intersection is currently utilised by over 40,000 vehicles per day and is one of the State's safety black spots with a total of 38 crashes recorded in a 12 month period to the end of 2013. Due to the safety significance of the intersection, the proposed upgrade to an interchange has received support and funding from both the State and Federal Governments (MRWA, 2014).

The Gateway WA Stage 1 project (Perth Airport and Freight Access project) was referred to the Environmental Protection Authority (EPA) on 29 March 2010. The EPA determined the project be 'Not Assessed - Public Advice Given and Managed Under Part V (Clearing)' on 29 March 2010 (CRN222510) and gave the following public advice on 13 May 2010 (EPA, 2010):

- The final layout of the roads shall be designed to avoid, minimise and manage the potential environmental impacts;
- Clearing should be constrained to be the minimum required for construction and the proponent should utilise previously disturbed areas for materials storage, laydown areas and turning points;
- Develop and implement clear and concise Environmental Management Plans to enact the commitments made, including the recommendations listed in Table 17 of AECOM (2009) Perth Airport and Freight Access Project Environmental Constraints document;
- Relevant government agencies should be consulted during the preparation of the Environmental Management Plans; and it is understood that public consultation will be undertaken regarding the finalisation of the design. This consultation should include a discussion of environmental issues. It is expected that a record be kept of the issues raised and how the final design has changed to incorporate these issues.

The (former) Commonwealth Department of the Environment, Water, Heritage and the Arts determined the Gateway WA Stage 1 project to be a controlled action under the EPBC Act on 31 March 2010 (EPBC Act referral 2010/5384). The (then) Department of Sustainability, Environment, Water, Population and Communities (SEWPAC) approved the project, subject to conditions, on 20 February 2013 (SEWPAC, 2013).

Clearing permit CPS 5242/1 was granted on 28 March 2013. CPS 5242/1 was amended to CPS 5242/2 on 24 July 2013 following the outcome of an appeal lodged against the granting of CPS 5242/1. The Minister for Environment allowed the appeal to the extent that the clearing permit is amended to specify that:

- The environmental management plan (incorporating an offset proposal) must be submitted to the CEO prior to the commencement of clearing; and
- The offset proposal component of the environmental management plan is to be approved by the CEO prior to the commencement of clearing of environmental values that are required to be offset.

The Roe Berkshire interchange project was referred to the EPA on 12 June 2014. The EPA determined the project be 'Not Assessed - Managed Under Part V Division 2 of the EP Act (Clearing)' on 11 August 2014 (Referral ID 14-838620).

The Roe Berkshire interchange project was referred to the Commonwealth Department of the Environment (DotE) on 17 June 2014. DotE determined the project to be not a controlled action under the EPBC Act on 14 July 2014 (EPBC Act referral 2014/7243).

Authority from the Minister for Environment is required to take an additional 28 rare flora under the *Wildlife Conservation Act 1950*. Authority was previously obtained from the Minister for Environment for the taking of 30 rare flora plants for the Gateway WA Stage 1 project.

The majority of the amended application area is identified as Primary Regional Road in the Metropolitan Regional Scheme.

A public submission was received in relation to the amended application (Submission, 2014). Issues raised have been addressed under the appropriate clearing principle. The submission details that objections in relation to the amount of clearing were made in previous submissions regarding the Gateway WA Stage 1 project and that the application to amend should be rejected. Additional concerns were raised regarding the following:

- "horticulture-based landscaping replacing cleared native vegetation";
- "need for native fauna tunnels and the problems with noise walls creating a barrier to wildlife";
- offsets used to compensate for the environmental impacts of the project are "generally not directed to the local area and they do not involve the conservation of an additional large total area of bushland in the local area"; and
- the submitter is opposed to the use of offsets but "in an instance where every level of government is wanting a project to proceed we would at least expect the proposed offsets be reasonable, local, and substantial".

The applicant has provided advice regarding the principles that have been, and will continue to be applied, in relation to avoiding and minimising clearing for design and construction of the Roe Berkshire interchange. These include (Gateway WA, 2014c; MRWA, 2014):

- steepening of batters;
- retaining of trees that would otherwise require removal for batter construction through placement of loose rock around tree bases and part of the tree trunk prior to placement of fill;
- construction of retaining walls; and
- siting and use of temporary clearing areas (e.g. avoiding clearing of native vegetation for access tracks or where clearing is unavoidable using smaller machinery and one way tracks).

An example of where clearing has been able to be avoided for the Roe Berkshire interchange is at the northern end of the project. Batters originally designed to accommodate the required level of the road have been removed from the design following surveying and subsequent design changes (Gateway WA, 2014c).

Methodology

References:

EPA, 2010
Gateway Vision, 2012
Gateway WA, 2014b
Gateway WA, 2014c
MRWA, 2012a
MRWA, 2014
SEWPAC, 2013
Submission, 2014

GIS Databases:

- Metropolitan Regional Scheme

4. References

- AECOM (2009) Perth Airport and Freight Access Project Environmental Constraints. Prepared for Main Roads Western Australia, 30/11/2009. AECOM Australia Pty Ltd. DER Ref: A584095.
- Cale, B. (2003) Carnaby's Black Cockatoo (*Calyptorhynchus latirostris*) Recovery Plan 2002- 2012. Department of Environment and Conservation, Wanneroo WA.
- Commonwealth of Australia (2001) National Objectives and Targets for Biodiversity Conservation 2001-2005, Canberra.
- DPaW (2007-) NatureMap: Mapping Western Australia's Biodiversity. Department of Parks and Wildlife. URL: <http://naturemap.dpaw.wa.gov.au/>. Accessed 19/9/2014.
- DEC (2012) Site inspection report for Clearing Permit Application CPS 5242/1. Conducted 22/10/2012. Department of Environment and Conservation, Western Australia. DER Ref: A568287.
- EPA (2006) Guidance for the Assessment of Environmental Factors - Level of Assessment for Proposals Affecting Natural Areas Within the System 6 Region and Swan Coastal Plain Portion of the System 1 Region. Guidance Statement No 10. Environmental Protection Authority, Western Australia.
- EPA (2010) Perth Airport and Freight Access CRN222510 - Notice Under Section 39A(3)(a) 'Not Assessed - Public Advice Given and Managed under Part V of the EP Act'. Environmental Protection Authority. DER Ref: A584098.
- Gateway Vision (2011) Flora and Vegetation Survey Gateway WA Project. Document No; GWA-16.00-RP-EN-0033 Revision A, December 2011. DER Ref: A542462.
- Gateway Vision (2012) Clearing Permit Supporting Document Main Roads Contract 141/09. Document No: GWA-18.00-RP-EN-0077 Revision 3, August 2012. Gateway Vision. DER Ref: A542462.
- Gateway WA (2013) Construction Environmental Management Plan GWA-PW-MNP-EN-0002 Rev 0, 22 July 2013 DER Ref: A653197.
- Gateway WA (2014a), Berkshire Road and Roe Highway Interchange, Biological Survey and Impact Assessment, June 2014, DER Ref: A775694.
- Gateway WA (2014b), Berkshire Road and Roe Highway Interchange, Clearing Impact Assessment and Vegetation Management Plan, June 2014, DER Ref: A775694.
- Gateway WA (2014c), Vegetation and Tree Retention Methods Position Paper, August 2014, DER Ref: A802868.
- Government of Western Australia (1997) Wetlands Conservation Policy for Western Australia, Department of Conservation and Land Management and the Water and Rivers Commission, Perth WA.
- Government of Western Australia. (2013). 2013 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report). Current as of March 2013. WA Department of Parks and Wildlife, Perth.
- Heddl, E. M., Loneragan, O. W., and Havel, J. J. (1980) Vegetation Complexes of the Darling System, Western Australia. In Department of Conservation and Environment, Atlas of Natural Resources, Darling System, Western Australia.
- Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.
- Mattiske, 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.
- MRWA (2012a) Clearing Permit Application CPS 5242/1. Received 6/09/2012. Main Roads Western Australia. DER Ref: A542462.
- MRWA (2012b) Response to Preliminary Assessment. Received 20/12/2012. Main Roads Western Australia. DER Ref: A582739.
- MRWA (2014) Response to Preliminary Assessment. Received 10/10/2014. Main Roads Western Australia. DER Ref: A817159.
- 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.
- SEWPAC (2012) EPBC Act Referral Guidelines for Three Threatened Black Cockatoo Species, April 2012. Department of Sustainability, Environment, Water, Populations and Communities. Commonwealth of Australia. Available from <http://www.environment.gov.au/system/files/resources/895d4094-af63-4dd3-8dff-ad2b9b943312/files/referral-guidelines-wa-black-cockatoo.pdf>
- SEWPAC (2013) Approval - Perth Airport and Freight Access Project (Gateway WA) EPBC 2010/5384. 20/02/2013. DER Ref: A604047.
- Shah, B. (2006) Conservation of Carnaby's Black-Cockatoo on the Swan Coastal Plain, Western Australia. December 2006. Carnaby's Black-Cockatoo Recovery Project. Birds Australia, Western Australia.
- 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.
- Submission (2014) Public submission for Clearing Permit Application CPS 5242/3. Received 20/7/2014. DER Ref: A784584.
- Valentine, L.E. and Stock, W. (2008) Food Resources of Carnaby's Black Cockatoo (*Calyptorhynchus latirostris*) in the Gnangara Sustainability Strategy Study Area. Edith Cowan University and Department of Environment and Conservation. December 2008.