GOVERNMENT OF
WESTERN AUSTRALIA

CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

PERMIT DETAILS

Area Permit Number: CPS 10132/1

File Number: DWERVT12314

Duration of Permit: From 22 June 2023 to 22 June 2025

PERMIT HOLDER

City of Albany

LAND ON WHICH CLEARING IS TO BE DONE

Down Road South Road Reserve (PIN 1274154), Drome

AUTHORISED ACTIVITY

The permit holder must not clear more than 0.02 hectares of *native vegetation* within the area cross-hatched yellow in Figure 1 of Schedule 1.

CONDITIONS

1. Avoid, minimise, and reduce impacts and extent of clearing

In determining the *native vegetation* authorised to be cleared under this permit, the permit holder must apply the following principles, set out in descending 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.

2. Weed and dieback management

When undertaking any clearing authorised under this permit, the permit holder must take the following measures to minimise the risk of 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 known *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.

3. Fauna management – western ringtail possums

(a) In relation to the area cross-hatched yellow in Figure 1 of Schedule 1, the permit holder must engage a *fauna specialist* to inspect that area immediately prior to, and for the duration of clearing activities, for the presence of *Pseudocheirus occidentalis* (western ringtail possum(s)).

(b) Clearing activities must cease in any area where fauna referred to in condition 3(a) are identified until either:

  (i) the western ringtail possum individual has moved on from that area to adjoining *suitable habitat*; or

  (ii) the western ringtail possum individual has been removed by a *western ringtail possum specialist*.

(c) Any western ringtail possum individual removed in accordance with condition 3(b)(ii) must be relocated by a *western ringtail possum specialist* to a *suitable habitat*.

(d) Where fauna is identified under condition 3(a), the permit holder must within 14 calendar days provide the following records to the *CEO*:

  (i) the number of individuals identified;

  (ii) the date each individual was identified;

  (iii) the location where each individual was identified recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 2020 (GDA2020), expressing the geographical coordinates in Eastings and Northings or decimal degrees;

  (iv) the number of individuals removed and relocated;

  (v) the relevant qualifications of the *western ringtail possum specialist* undertaking removal and relocation;

  (vi) the date each individual was removed;

  (vii) the method of removal;

  (viii) the date each individual was relocated;

  (ix) the location where each individual was relocated to, recorded using a GPS unit set to GDA2020, expressing the geographical coordinates in Eastings and Northings or decimal degrees; and

  (x) details pertaining to the circumstances of any death of, or injury sustained by, an individual.

4. Offset – Lot 5780 on Deposited Plan 206199

Within 12 months of the commencement of clearing authorised under this permit and no later than 22 June 2024, the permit holder must provide to the *CEO* a copy of the executed conservation covenant under section 30B of the *Soil and Land Conservation Act 1945* setting aside the area shaded red on Figure 2 of Schedule 1 for the protection and management of vegetation in perpetuity.

5. Records that must be kept

The permit holder must maintain records relating to the listed relevant matters in accordance with the specifications detailed in Table 1.

Table 1: Records that must be kept

No.	Relevant matter	Specifications
1.	In relation to the authorised clearing activities generally	(a) the species composition, structure, and density of the cleared area; (b) the location where the clearing occurred, recorded using a Global Positioning System (GPS) unit set to GDA2020, expressing the geographical coordinates in Eastings and Northings; (c) the date that the area was cleared; (d) the size of the area cleared (in hectares); (e) actions taken to avoid, minimise, and reduce the impacts and extent of clearing in accordance with condition 1; (f) actions taken to minimise the risk of the introduction and spread of *weeds* and *dieback* in accordance with condition 2; (g) actions taken to manage and mitigate impacts to western ringtail possums in accordance with condition 3, and; (h) actions taken in accordance with condition 4 of this permit.

6. Reporting

The permit holder must provide to the *CEO* the records required under condition 5 of this permit when requested by the *CEO*.

DEFINITIONS

In this permit, the terms in Table have the meanings defined.

Table 2: Definitions

Term	Definition
CEO	Chief Executive Officer of the department responsible for the administration of the clearing provisions under the *Environmental Protection Act 1986*.
clearing	has the meaning given under section 3(1) of the EP Act.
condition	a condition to which this clearing permit is subject under section 51H of the EP Act.
fauna specialist	means a person who holds a tertiary qualification specialising in environmental science or equivalent, and has a minimum of 2 years work

Term	Definition
	experience in fauna identification and surveys of fauna native to the region being inspected or surveyed, or who is approved by the *CEO* as a suitable fauna specialist for the bioregion, and who holds a valid fauna licence issued under the *Biodiversity Conservation Act 2016*.
fill	means material used to increase the ground level, or to fill a depression.
dieback	means the effect of *Phytophthora* species on native vegetation.
department	means the department established under section 35 of the *Public Sector Management Act 1994* (WA) and designated as responsible for the administration of the EP Act, which includes Part V Division 3.
EP Act	*Environmental Protection Act 1986* (WA)
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.
native vegetation	has the meaning given under section 3(1) and section 51A of the EP Act.
suitable habitat (western ringtail possum)	means habitat known to support western ringtail possums (*Pseudocheirus occidentalis*) within the known current distribution of the species, typically characterised by abundant foliage, presence of suitable nesting structures such as tree hollows, as well as high canopy cover and continuity. Known habitat includes peppermint (*Agonis flexuosa*) dominated woodlands, jarrah (*Eucalyptus marginata*) and marri (*Corymbia calophylla*) forests, riparian vegetation with a canopy of Bullich (*Eucalyptus megacarpa*) or flooded gum (*Eucalyptus rudis*), karri (*Eucalyptus diversicolor*) forests, sheoak (*Allocasuarina fraseriana*) dominated woodlands, and other stands of myrtaceous trees growing near swamps, watercourses or floodplains.
weeds	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 Biodiversity, Conservation and Attractions species-led ecological impact and invasiveness ranking summary, regardless of ranking; or (c) not indigenous to the area concerned.
western ringtail possum specialist	means a *fauna specialist* who holds a tertiary qualification specialising in environmental science or equivalent, has a minimum of two years of work experience in western ringtail possum (*Pseudocheirus occidentalis*) identification, surveys of western ringtail possums and capture and handling of western ringtail possums, and holds a valid fauna licence issued under the *Biodiversity Conservation Act 2016*.

END OF CONDITIONS

JBurton

Jessica Burton
A/MANAGER
NATIVE VEGETATION REGULATION

Officer delegated under Section 20
of the Environmental Protection Act 1986

31 May 2023

Schedule 1

The boundary of the area authorised to be cleared is shown in the map below (

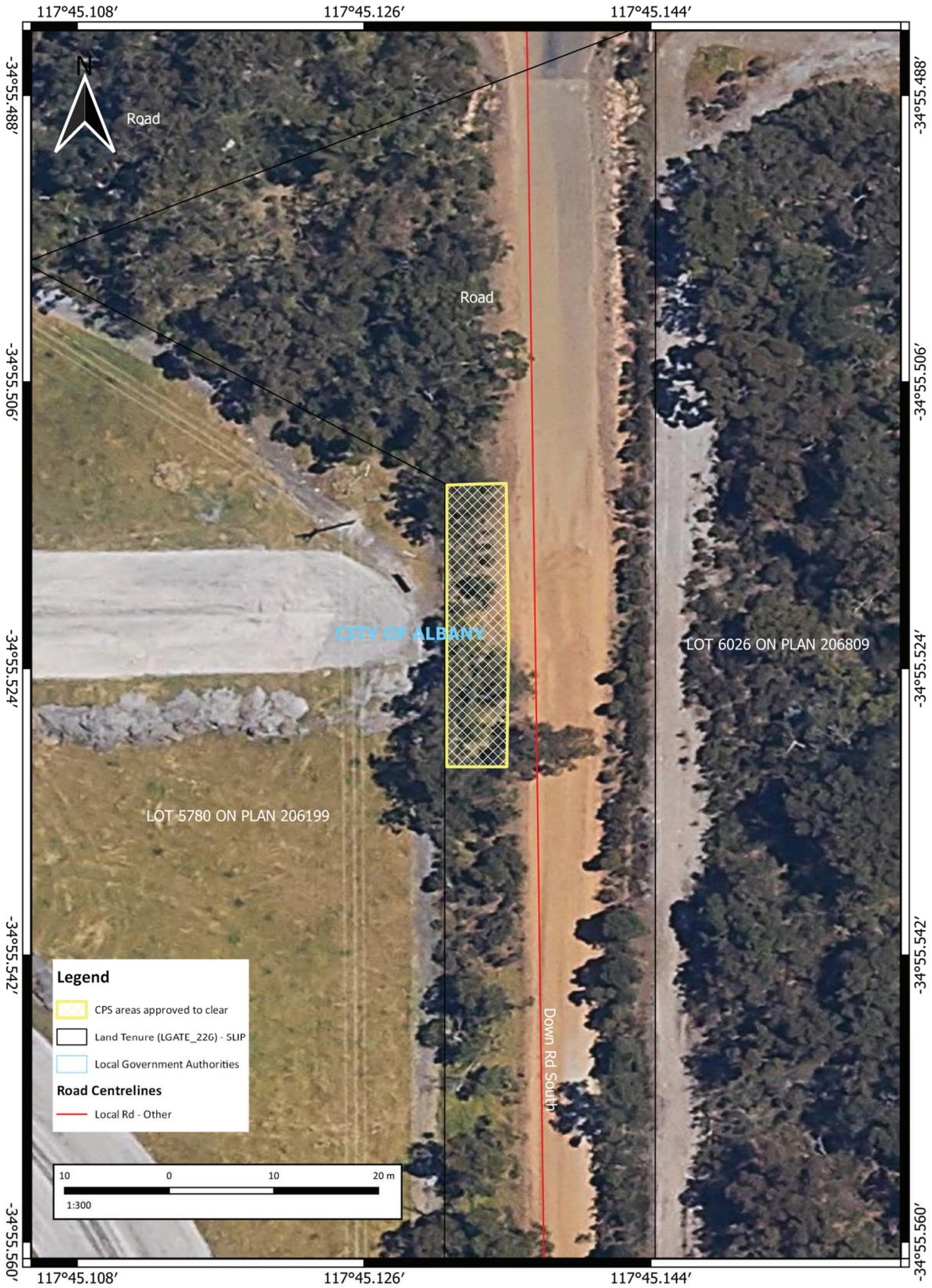


Figure **1**).



Figure 1: Map of the boundary of the area within which clearing may occur

The boundary of the offset site is shown in the map below (


117°45.108′
117°45.126′
117°45.144′
-34°55.488′
-34°55.506′
-34°55.524′
-34°55.542′
-34°55.560′
N
Road
Road
CITY OF ALBANY
LOT 6026 ON PLAN 206809
LOT 5780 ON PLAN 206199
Down Rd South
Legend
CPS areas approved to clear
Land Tenure (LGATE_226) - SLIP
Local Government Authorities
Road Centrelines
Local Rd - Other
10 0 10 20 m
1:300

Figure 12).



Figure 2: Map of the boundary of the approved offset site

Government of Western Australia
Department of Water and Environmental Regulation

Clearing Permit Decision Report

1 Application details and outcome

1.1. Permit application details

Permit number:	CPS 10132/1
Permit type:	Area permit
Applicant name:	City of Albany
Application received:	28 March 2023
Application area:	0.02 hectares of native vegetation
Purpose of clearing:	Installing an emergency exit
Method of clearing:	Mechanical Removal
Property:	Down Road South Road Reserve (PIN 1274154)
Location (LGA area/s):	City of Albany
Localities (suburb/s):	Drome

1.2. Description of clearing activities

The area proposed to be cleared is a 0.02-hectare patch within an approximately 2.2-kilometre strip of remnant vegetation along a road reserve, connecting to multiple larger areas of remnant vegetation in an otherwise highly cleared landscape. The proposed clearing is to install an emergency exit for the Albany Motorsport Park, proposed to be developed in the adjacent Lot 5780 on Deposited Plan 206199 (see Figure 1, Section 1.5).

1.3. Decision on application

Decision:	Granted
Decision date:	31 May 2023
Decision area:	0.02 hectares of native vegetation, as depicted in Section 1.5, below.

1.4. Reasons for decision

This clearing permit application was submitted, accepted, assessed and determined in accordance with sections 51E and 51O of the *Environmental Protection Act 1986* (EP Act). The Department of Water and Environmental Regulation (DWER) advertised the application for 7 days and one submission was received (see Appendix B).

In making this decision, the Delegated Officer had regard for the site characteristics (see Appendix A), relevant datasets (see Appendix G), information provided by the applicant, the clearing principles set out in Schedule 5 of the EP Act (see Appendix C) and any other matters considered relevant to the assessment (see Section 3). The Delegated Officer also took into consideration the applicant's efforts to avoid and minimise clearing and mitigate impacts.

The assessment identified that the proposed clearing will result in:

- the loss of native vegetation that is suitable habitat for Western Ringtail Possum (*Pseudocheirus occidentalis)*
- the loss of remnant native vegetation in an area that has been extensively cleared

- the potential introduction and spread of weeds and dieback into adjacent vegetation, which could impact on the quality of the adjacent vegetation and its habitat values.

After consideration of the available information, as well as the applicant's minimisation and mitigation measures (see Section 3.1), the Delegated Officer determined the proposed clearing will result in the following significant residual impacts:

- 0.02 hectares of native vegetation considered as providing significant habitat connectivity for western ringtail possums (WRP)
- 0.02 hectares of native vegetation considered a significant remnant of native vegetation in an extensively cleared landscape.

In accordance with the Government of Western Australia's Offsets Policy (2011), an offset is required to counterbalance the impacts of the proposed clearing (see Section 4). The Delegated Officer considered the quantification of the offset required in accordance with the Western Australian Environmental Offset Calculator and Guide (see Appendix E). The City of Albany (the City) proposed an offset to place a Conservation Covenant under the *Soil and Land Conservation Act 1945* over a 0.2-hectare portion of native vegetation adjacent to the application area, owned by the City. The suitability of this offset is summarised in Section 4.

The Delegated Officer therefore decided to grant a clearing permit subject to conditions to:

- secure a Conservation Covenant registered on the Certificate of Title to conserve 0.2 hectares of native vegetation in perpetuity within 12 months of the granting of the Permit
- undertake pre-clearing inspection of trees for presence of western ringtail possums
- avoid, minimise to reduce the impacts and extent of clearing
- take hygiene steps to minimise the risk of the introduction and spread of weeds and dieback

Given the above and noting the offset provided counterbalances the significant residual impacts of the clearing (see Section 4), the Delegated Officer determined the proposed clearing is unlikely to lead to an unacceptable risk to the environment.

1.5. Site map



Figure 1 Map of the application area

The area cross-hatched yellow indicates the area authorised to be cleared under the granted clearing permit.

2 Legislative context

The clearing of native vegetation in Western Australia is regulated under the EP Act and the *Environmental Protection (Clearing of Native Vegetation) Regulations 2004* (Clearing Regulations).

In addition to the matters considered in accordance with section 51O of the EP Act (see Section 1.4), the Delegated Officer has also had regard to the objects and principles under section 4A of the EP Act, particularly:

- the precautionary principle
- the principle of intergenerational equity
- the polluter pays principle
- the principle of the conservation of biological diversity and ecological integrity.

Other legislation of relevance for this assessment include:

- *Biodiversity Conservation Act 2016* (WA) (BC Act)
- *Conservation and Land Management Act 1984* (WA) (CALM Act)
- *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act)

Relevant policies considered during the assessment include:

- *Environmental Offsets Policy* (2011)

The key guidance documents which inform this assessment are:

- *A guide to the assessment of applications to clear native vegetation* (DER, December 2013)
- *Procedure: Native vegetation clearing permits* (DWER, October 2019)
- *Environmental Offsets Guidelines* (August 2014)

3 Detailed assessment of application

3.1. Avoidance and mitigation measures

Evidence was submitted by the applicant demonstrating the application area was chosen in an area of minimal native vegetation suitable for fire management and emergency exit requirements. The emergency exit is a requirement of the bushfire management plan for the Albany Motorsport Park development in the adjacent Lot 5780 on Deposited Plan 20699.

After consideration of avoidance and mitigation measures, it was determined that an offset was necessary to counterbalance the significant residual impacts to habitat connectivity for Western Ringtail Possum (*Pseudocheirus occidentalis)*, and of clearing a significant remnant of native vegetation in an extensively cleared landscape. In accordance with the Government of Western Australia's *Environmental Offsets Policy* and *Environmental Offsets Guidelines*, these significant residual impacts have been addressed through the conditioning of an environmental offset on the permit. The nature and suitability of the offset provided by the City are summarised in Section 4.

Given the above, the Delegated Officer is satisfied that the environmental impacts associated with the proposed clearing have been appropriately avoided, minimised, and mitigated.

3.2. Assessment of impacts on environmental values

In assessing the application, the Delegated Officer has had regard to the site characteristics (see 0B) and the extent to which the impacts of the proposed clearing present a risk to biological, conservation, or land and water resource values.

The assessment against the clearing principles (see **Error! Reference source not found.**) identified that the impacts of the proposed clearing present a risk to biological values (fauna, flora and vegetation) and significant remnant vegetation. The consideration of these impacts, and the extent to which they can be managed through conditions applied in line with sections 51H and 51I of the EP Act, is set out below.

3.2.1. Environmental value: biological values (fauna) – Clearing Principle (a & *b)*

Assessment

Vegetation mapping (Sandiford and Barrett 2010) and photographs show the application area consists of juvenile *Corymbia calophylla* (marri), *Eucalyptus marginata* (jarrah) and *Allocasuarina fraseriana* (sheoak) over an understorey of sedges and weeds (see Appendix F). Photographs supplied by the applicant indicate the vegetation within the proposed clearing area is in Good to Degraded (Keighery 1994) condition (see Appendix F).

The desktop assessment identified 15 conservation significant fauna recorded within the local area. In forming a view on the likelihood of each species occurring within the application area, the following was considered:

- the preferred habitat and vegetation types of the species,
- their recorded proximity to the application area, and
- date of record (See Appendix A.4).

The likelihood analysis identified six fauna species which may occur within the application area (See Appendix A.4.). Of these, *Pseudocheirus occidentalis* (western ringtail possum) is considered likely to occur. The application area is not considered high value foraging or suitable breeding habitat for black cockatoos.

Western ringtail possum

The western ringtail possum (WRP) is an arboreal marsupial associated with a diverse range of habitats. The application area is in the South Coast management zone, one of three identified management zones known to support large numbers of WRP's (DPAW 2017). Habitat used by WRP in the South Coast zone includes jarrah marri woodland. Habitat critical for survival includes "high nutrient foliage availability for food, suitable structures for protection/nesting, and canopy continuity to avoid/escape predation and other threats" (DPAW 2017). WRP have a home range less than five hectares (DPAW 2017).

According to the WRP recovery plan (DPAW 2017), habitat loss and fragmentation from urban development is a key threatening process for WRP in the South Coast zone. Disruption to canopy connectivity restricts dispersal ability of WRP and can cause overpopulation within patches of habitat. Where WRP must come to the ground to disperse between habitat, the risk of road kills and predation increases. Maintaining habitat connectivity is essential for long-term conservation of WRP.

According to available databases, the closest western ringtail possum record is 2.48 kilometres from the application area. Assessment of aerial imagery indicates the vegetation within the application area provides connectivity between areas of higher quality remnant vegetation within the extensively cleared local area (approximately 10 kilometres from the application area). The vegetation within Down Road South links nearby areas of remnant vegetation, such as Down Road West Road Reserve (PIN 1274152), to areas further south, including a reserve managed by the Department of Biodiversity Conservation and Attractions (DBCA) (R20948, approximately 2km south).

Considering the final land use of the application area is planned to be an emergency exit, the proposed clearing will permanently sever canopy linkage for WRP within the road reserve. This will likely impact WRP dispersal ability within the local area. Additionally, the proposed clearing may result in WRP using roads to move between areas of remnant vegetation, which may contribute to WRP fatalities within the local area. While the trees within the application area are juvenile, they are considered to provide vegetation cover for WRP and allow movement within the road reserve without WRP needing to travel across the road. Given the linkage value of the application area, it is considered significant habitat for western ringtail possums.

Additionally, the City of Albany has a current permit to clear 0.326 hectares of native vegetation within Down Road West, approximately 0.27 kilometres from the application area (CPS 9447/1). Given this, the additional clearing proposed under this application (CPS 10132/1) is considered a cumulative impact on WRP habitat connectivity within the local area.

Black cockatoos

The application area is within the mapped distribution of *Zanda latirostris* (Carnaby's cockatoo), *Zanda Calyptorhynchus* (Baudin's cockatoo) and *Calyptorhynchus banksia naso* (forest red-tailed black cockatoo). According to available databases, there are no known black cockatoo breeding sites within the local area. The closest known roost site is 4.5 kilometres to the east. The application area is not mapped as black cockatoo feeding habitat, however adjacent vegetation is mapped as black cockatoo feeding habitat.

According to the referral guideline for threatened black cockatoo species, published by the Department of Agriculture, Water and the Environment (2022), habitat critical for recovery of black cockatoos includes foraging habitat (including remnant patches of vegetation), night roosting habitat and nesting trees for breeding. Suitable breeding habitat for black cockatoos includes trees which have a suitable nest hollow (DAWE 2022).

The vegetation in the application area contains suitable foraging species for black cockatoos (DAWE 2022). However, as these trees are juvenile, the vegetation is not considered high value black cockatoo foraging habitat. These trees are also unlikely to contain breeding hollows or provide suitable night roosting habitat for black cockatoos. Given the size and condition of the application area, and the better-quality black cockatoo feeding habitat mapped within the adjacent vegetation, the application area is unlikely to provide significant foraging value for black cockatoos. The proposed clearing is unlikely to significantly impact black cockatoo habitat within the local area.

Other fauna
Other fauna which may be transient visitors to the application area include *Isoodon fusciventer* (quenda) and *Dasyurus geoffroii* (Chuditch, western quoll). Given the lack of dense understorey, size and condition of the application area and distance to the nearest known record, the application area is not considered significant habitat for these species.

Conclusion
Based on the above assessment, the impact of the proposed clearing on western ringtail possum habitat connectivity constitutes a significant residual impact. To reduce the risk of impact to WRP individuals present at the time of the clearing, pre-clearing inspection of trees for western ringtail possums will be required.

Conditions
To address the above impacts, the following management measures will be required as conditions on the clearing permit:

- undertake pre-clearing inspection of trees for presence of western ringtail possums
- environmental offsets (See Section 4)

3.2.2. Biological values (flora and vegetation) - Clearing Principles (a & c)

Assessment
Vegetation mapping (Sandiford and Barrett, 2010) and photographs show the application area consists of juvenile *Corymbia calophylla* (marri), *Eucalyptus marginata* (jarrah) and *Allocasuarina fraseriana* (sheoak) over an understorey of sedges and weeds (see Appendix F). Photographs supplied by the applicant indicate the vegetation within the proposed clearing area is in Good to Degraded (Keighery 1994) condition (see Appendix F).

According to available databases, there are no conservation significant flora records within the application area. The closest flora record is the threatened *Banksia brownii*, approximately 1 kilometre southeast. Five species of threatened flora have been recorded within the local area.

A likelihood assessment was conducted based on habitat and soil preferences, vegetation within the application area, and known species distribution (See Appendix A.3). The assessment identified four conservation significant flora species which may occur: *Banksia brownii* (T), *Banksia goodii* (T), *Synaphea incurva* (P3) and *Banksia serra* (P4). These species have been previously recorded within remnant roadside or degraded vegetation.

Flora
***Banksia brownii* (T)** occurs in a range of habitats, including low woodland on sandy clay soils on lateritic ridges (Commonwealth of Australia 2008a). According to the *B. brownii* recovery plan (Gilfillan and Barrett 2008), this species is associated with proteaceous and myrtaceous vegetation. *B. brownii* has been recorded within the Esperance Plains, Jarrah Forest, and Warren IBRA regions (WA Herb 1998-). According to available databases, there are 113 records of this species within Western Australia (WA). Of these, 53 records are within the Jarrah Forest IBRA region, 23 of which are within the local area (10 kilometres from the application area).

The three records within 5 kilometres of the application area are historical (over 30 years old). More recent records are located over 5 kilometres from the application area, with majority of these located within reserves (including the nearby Mill Brook Nature Reserve, R 18739). The application area is at the edge of the known range for *B. brownii*. Records within Florabase show frequency of individuals ranges between rare to common. Given the lack of recent records near the application area and the abundance of records within DBCA managed reserves, the proposed clearing area is unlikely to contain significant habitat for this species.

***Banksia goodii* (T)** occurs in low open forest and low woodland of jarrah and sheoak over Agonis heath (Commonwealth of Australia 2008b). This species generally occurs on shallow white to grey sand over laterite. *B. goodii* has only been recorded within the Jarrah Forest IBRA region (WA Herb 1998-). According to available databases there are 70 known records of this species within WA, 26 of which are within the local area. The closest record is approximately 6.5 kilometres north of the application area.

B. goodii and its habitat requirements are represented in the DBCA estate Mill Brook Nature Reserve (approximately eight kilometres northeast of the application area). Nine populations are located within the reserve and additional populations are present within the Denmark Catchment State Forest (approximately 14 km northwest of the application area). These conservation areas and their direct surroundings represent most records for this species (approximately 90%). Given the distribution and extent of existing records, and abundance of records within DBCA managed lands, the application area is unlikely to comprise significant habitat for this species.

***Synaphea incurva* (P3)** is associated with Eucalyptus woodlands and generally occurs on gravelly loam or sandy soils (WA Herb 1998-). *S. incurva* has been recorded within the Esperance Plains, Jarrah Forest, and Warren IBRA regions. According to available databases there are 26 records of this species within WA. Of these, 23 records are within the Jarrah Forest IBRA region, 12 of which are within the local area. The closest record is 1.6 kilometres

southeast of the application area, recorded in 1993. The most recent *S. incurva* record in the local area is from 2003. Records within Florabase show frequency of individuals ranges between rare and locally abundant. Given the lack of recent records near the proposed clearing area, this species is considered unlikely to occur within the application area.

***Banksia serra* (P4)** is associated with a range of habitats, including marri and jarrah woodland (WA Herb 1998-). This species generally occurs on gravel, sand or clay loam over laterite. *B. serra* has been recorded within the Esperance Plains, Jarrah Forest and Warren IBRA regions. According to available databases there are 96 records of this species within WA. Of these, 46 records are within the Jarrah Forest IBRA region, nine of which are within the local area. The closest known *B. serra* record is 3.4 kilometres west of the application area, recorded in 1993. Aerial imagery indicates the area surrounding this record has since been cleared. Records within Florabase show frequency of individuals ranges between rare to very abundant (greater than 1500 individuals). Given the extent and distribution of existing records, this species is considered unlikely to occur within the application area.

Based on the habitat preferences of the above four flora species, the condition of the vegetation within the application area, adjacent land uses, and the distribution and extent of existing records, the application area is not considered likely to comprise significant habitat for these species. If present within the application area, the proposed clearing is unlikely to affect the conservation status of these species given their extent of occurrence in the Jarrah Forest IBRA region, and the size and condition of the application area.

Phytophthora dieback is known to be a threat to vegetation in the Albany region (Sandiford and Barrett 2010). The proposed clearing may indirectly impact the surrounding vegetation due to introduction of dieback and weeds. It is considered that the impacts of the proposed clearing to flora can be managed through the implementation of weed and dieback hygiene management conditions.

Priority ecological communities (PEC)
According to available databases, the closest threatened or priority ecological community to the application area is the priority 1 *Banksia coccinea* Shrubland/*Eucalyptus staeri*/Sheoak Open Woodland ('Community type 14a'). This PEC is described as a diverse community where "*Allocasuarina fraseriana*, *Eucalyptus staeri*, *Banksia attenuata* and *Banksia ilicifolia* are present as emergents or as low open woodland above a *Banksia coccinea* tall open scrub, mixed open/closed heath, mixed low open heath, mixed sedgeland and open herbland" (DBCA 2022). Given the associated species and vegetation structure of the *Banksia coccinea* Shrubland PEC, the application area is not considered representative of this community.

Conclusion
Based on the above assessment, it is unlikely that the application area provides significant habitat for conservation significant flora. Given the size of proposed clearing, condition of the vegetation, and distribution and extent of existing records, the proposed clearing is unlikely to have a significant residual impact on conservation significant flora species if present within the application area. It is considered that the impacts of the proposed clearing on flora can be managed to be acceptable subject to the below conditions.

Conditions
To address the above impacts, the following management measures will be required as conditions on the clearing permit:

- Take hygiene steps to minimise the risk of the introduction and spread of weeds and dieback to adjacent vegetation.

3.2.3. Environmental value: significant remnant vegetation – Clearing Principle (e)

Assessment

The National Objectives and Targets for Biodiversity Conservation 2001-2005 include a target to have clearing controls in place that prevent clearance of ecological communities with an extent below 30 per cent of that present pre-1750 (i.e., pre-European settlement) (Commonwealth of Australia 2001). This is the threshold level below which species loss appears to accelerate exponentially.

The local area retains 23.27 per cent of the of the pre-European vegetation extent (See Appendix 0). The application area is considered a significant remnant within an extensively cleared landscape.

The clearing area falls within the South Coast Macro corridor (Strategic Zone A). Noting the extent of clearing in the local area, the vegetation proposed to be cleared likely contributes to an ecological linkage function enabling fauna to move between areas of remnant vegetation (see Section 3.2.1.). The proposed clearing is likely to impact vegetation connectivity in the local area.

Conclusion
As discussed within Section 3.2.1, the application area provides habitat connectivity for fauna and forms a local linkage across the patchwork of remnant vegetation within the local area. Given this, the vegetation within the application area is considered significant as a remnant of native vegetation within a highly cleared landscape.

Conditions
To address the above impacts, the following management measures will be required as conditions on the clearing permit:

- avoidance and minimisation to reduce the impacts and extent of clearing
- take hygiene steps to minimise the risk of the introduction and spread of weeds and dieback to adjacent vegetation.
- environmental offsets (as detailed in Section 4 below)

3.3. Relevant planning instruments and other matters

DWER's Water Source Protection Planning branch advised the final land use of the application area (emergency exit road) is compatible with Priority 2 Public Drinking Water Source areas (DWER 2023).

The application was originally applied as an amendment to CPS 9447/1. The applicant decided to withdraw the amendment and reapply as a new application. Three public submissions were received under the amendment application. The matters raised in those submissions have been considered in this assessment.

It is the permit holder's responsibility to comply with the *Aboriginal Heritage Act 1972* (WA) and ensure that no Aboriginal Sites of Significance are damaged through the clearing process.

4 Suitability of offsets

Through the detailed assessment outlined in Section 3.2 above, the Delegated Officer has determined that the following significant residual impacts remain after the application of the avoidance and mitigation measures summarised in Section 3.1:

- 0.02 hectares of native vegetation considered as providing significant habitat connectivity for western ringtail possums
- 0.02 hectares of native vegetation considered a significant remnant of native vegetation in an extensively cleared landscape.

The applicant proposed an environmental offset consisting of 0.2 hectares of very good quality habitat for western ringtail possums to be placed under a conservation covenant under section 30B of *the Soil and Land Conservation Act 1945*. The proposed offset area is located approximately 2 kilometres west of the application area (Figure 3), within the adjacent property Lot 5780 on Deposited Plan 20699 owned by the City (Figure 2). The conservation covenant will be registered on the Certificate of Title of the property and will require the protection and management of the vegetation in perpetuity.

The proposed offset area is mapped as jarrah/marri/sheoak laterite forest and is considered to be in Very Good (Keighery 1994) condition. Representative photos are available in Appendix F. The offset area is considered to provide vegetation connectiity between Lot 5780 and Down Road West Road reserve (PIN 1274152).

The Delegated Officer considers that this adequately counterbalances the significant residual impacts listed above. The justification for the values used in the offset calculation is provided in **Error! Reference source not found.**Appendix E.



Figure 2. The proposed offset site (crosshatched red) measuring approximately 0.2 hectares.

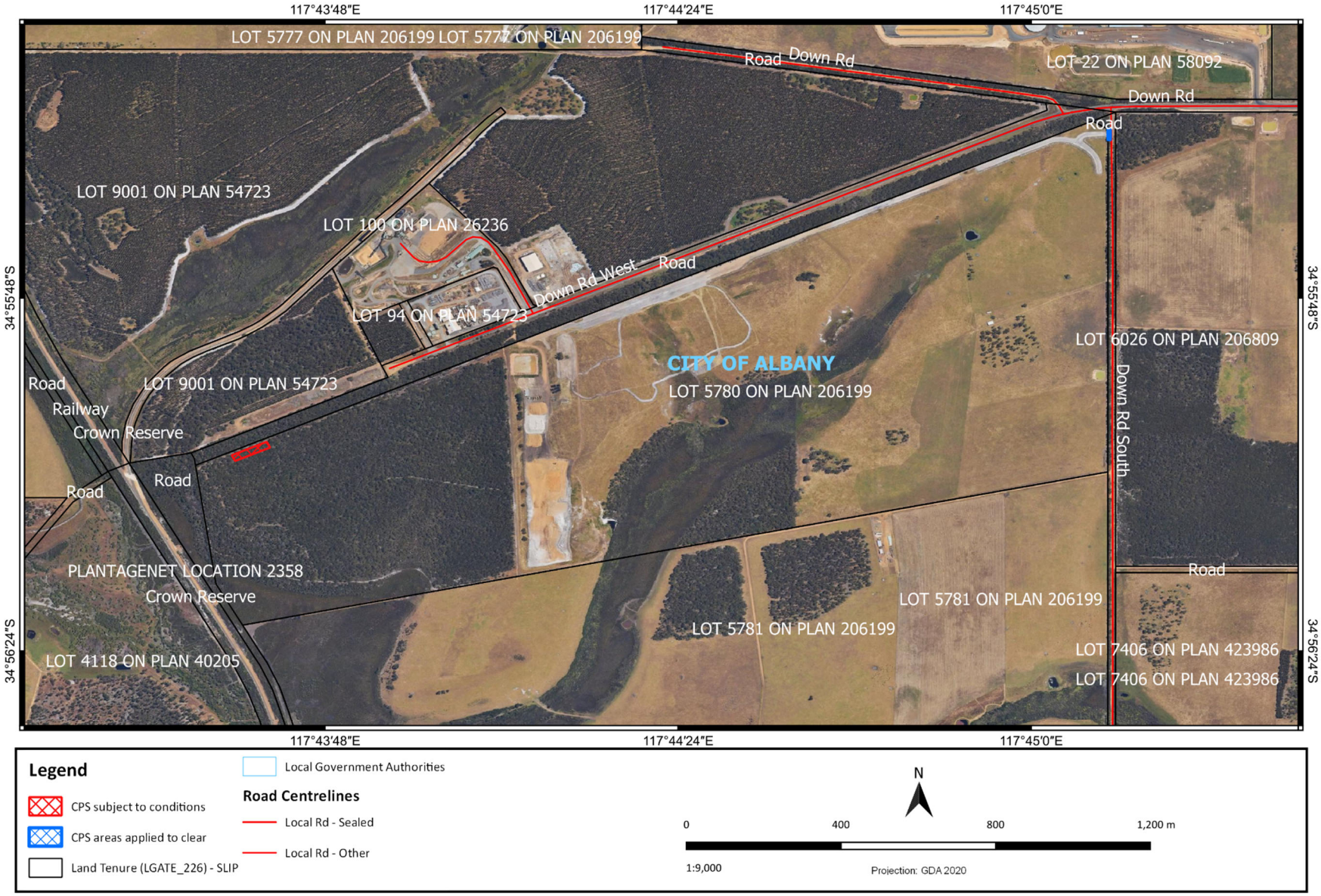


Figure 3. Map of the proposed offset site (crosshatched red) in context of the application area (crosshatched blue).

End

Appendix A. Site characteristics

A.1. Site characteristics

Characteristic	Details
Local context	The area proposed to be cleared is a 0.02-hectare area within a continuous tract of roadside native vegetation in the intensive land use zone of Western Australia. It is surrounded by areas cleared for rural activities (e.g. pasture). The proposed clearing area contributes to an important linkage between larger areas of remnant vegetation in an otherwise highly cleared landscape. Spatial data indicates the local area (10-kilometre radius from the centre of the application area) retains approximately 23.27 per cent of the original native vegetation cover.
Ecological linkage	The clearing area falls within the South Coast Macro corridor (Strategic Zone A).
Conservation areas	The clearing area does not intersect with a conservation area. The closest conservation area is Down Road Nature Reserve (R 20948) located approximately 2.1 km south of the application area. It is connected to the application area by vegetation within Down Road South Road reserve.
Vegetation description	Photographs supplied by the applicant indicate the vegetation within the proposed clearing area consists of juvenile *Corymbia calophylla* (marri), *Eucalyptus marginata* (jarrah) and *Allocasuarina fraseriana* (sheoak) over an understorey of sedges and weeds. Representative photos are available in Appendix F. This is broadly consistent with the mapped vegetation type: • Beard Jarrah Forest (978), which is described as low forest, woodland or low woodland with scattered trees; *Eucalyptus marginata* (Jarrah), *Banksia* spp. or *Allocasuarina spp.* (Shepherd et al. 2001). *The mapped vegetation type retains approximately* 35.37 *per cent of the original extent (Government of Western Australia 2019).* The Albany Regional Vegetation Survey (Sandiford and Barrett 2010) maps the application area as: • Jarrah/sheoak/*Eucalyptus staeri s*andy woodland. Key identifying features are a canopy of *Eucalyptus marginata, E. staeri* and *Allocasuarina fraseriana* over secondary low tree stratum containing *Banksia attenuata, B. grandis* and *B. ilicifolia.* Very diverse understorey with species typical of both lateritic and deep sandy soils. Sedgeland dominated by *Anarthria scabra* and *Cyathochaeta equitans* with *Tricostularia elatior* subsp *elatior* often present. • Jarrah/marri/sheoak laterite forest. Key identifying features are a canopy of *Eucalyptus marginata* and *Allocasuarina fraseriana* over a relatively open though diverse understorey dominated by *Bossiaea linophylla, Agonis theiformis and Xanthosia rotundifolia* with *Banksia grandis* often present as a tall shrub strata. Open sedgeland of *Tetraria octandra, Tetraria capillaris, Desmocladus fasciculatus* and *Anarthria prolifera.*
Vegetation condition	Photographs supplied by the applicant indicate the vegetation within the proposed clearing area is in Good to Degraded (Keighery 1994) condition, described as: • Good: Vegetation structure significantly altered by very obvious signs of multiple disturbances. Retains basic vegetation structure or ability to regenerate it. For example, disturbance to vegetation structure caused by very frequent fires, the presence of some very aggressive weeds at high density, partial clearing, dieback and/or grazing. • Degraded: Basic vegetation structure severely impacted by disturbance. Scope for regeneration but not to a state approaching good condition without intensive management. For example, disturbance to vegetation structure caused by very frequent fires, the presence of very aggressive weeds, partial clearing, dieback and/or grazing.

Characteristic	Details
	The full Keighery (1994) condition rating scale is provided in Appendix D. Representative photos are available in Appendix F.
Climate and landform	The average annual rainfall received over the application area from 1991 to 2020 is 600 to 1000 millimetres (Commonwealth of Australia 2021). The application area is at an altitude of 65 - 70 meters above sea level.
Soil description	The soil is mapped as Dempster crest Phase, described as sands and laterite on elongate crests; Jarrah-Albany Blackbutt-Marri forest.
Land degradation risk	Land degradation risks mapped over the application area are provided in table A.5.
Waterbodies	The desktop assessment and aerial imagery indicate that no watercourses transect the area proposed to be cleared. The nearest watercourse is an unnamed tributary of Marbelup Brook, located approximately 700 metres south-west of the application area. Marbellup Flats, a conservation class wetland, is located approximately 1 kilometre from the application area in the same direction.
Hydrogeography	The application area is located within the Albany Groundwater Area as proclaimed under the *Rights in Water and Irrigation Act 1914* (RIWI Act) and the Public Drinking Water Marbellup Brook Catchment Area (Priority 2).
Flora	The desktop assessment identified 20 conservation significant flora taxa within the local area which comprises of five threatened flora and 15 priority flora taxa. The nearest record is a threatened species, *Banksia brownii*, located approximately 1.09 kilometres from the application area. There are no flora records within the same mapped soil subtype as the application area.
Ecological communities	No conservation significant ecological communities are mapped over the application area. The closest mapped priority ecological community is the priority 1 *Banksia coccinea* Shrubland/*Eucalyptus staeri*/Sheoak Open Woodland ('Community type 14a'), approximately 2 kilometres from the application area. There are no Threatened Ecological Communities (TEC) within the local area.
Fauna	The desktop assessment identified 15 conservation significant fauna in the local area. The closest fauna record is a *Pseudocheirus occidentalis* (western ringtail possum) approximately 2.5 kilometres from the application area. The application area is mapped within Baudin's cockatoo, Carnaby's cockatoo and forest red-tailed black cockatoo known distribution zones. There are five known black cockatoo roost sites within the local area, the closest is 4.5 kilometres from the application area. The closest known black cockatoo breeding site is 41 kilometres from the application area.

A.2. Vegetation extent

	Pre-European extent (ha)	Current extent (ha)	Extent remaining (%)	Current extent in all DBCA managed land (ha)	Current proportion (%) of pre-European extent in all DBCA managed land
IBRA bioregion*					
Jarrah Forest	4,506,660.25	2,399,838.15	53.25	617,065.14	13.69
Vegetation complex**					
Jarrah Forest (978)	53,016.57	18,751.03	35.37	5,024.08	9.48
Local area					
10km radius	31,489.20	7,325.86	23.27	-	-

*Government of Western Australia (2019a)

**Government of Western Australia (2019b)

A.3. Flora analysis table

Species name	Conservation status	Suitable habitat features? [Y/N]	Suitable vegetation type? [Y/N]	Suitable soil type? [Y/N]	Distance of closest record to application area (km)
Banksia brownii	T	Y	Y	Y	1.09
Synaphea incurva	3	Y	Y	Y	1.58
Banksia serra	4	Y	Y	Y	3.38
Banksia goodii	T	Y	Y	Y	6.43

A.4. Fauna analysis table

Species name	Conservation status	Suitable habitat features? [Y/N]	Suitable vegetation type? [Y/N]	Distance of closest record to application area (km)
Pseudocheirus occidentalis	western ringtail possum, ngwayir	Y	Y	2.48
Zanda latirostris	Carnaby's cockatoo	N	Y	2.74
Isoodon fusciventer	quenda, southwestern brown bandicoot	N	Y	3.90
Calyptorhynchus banksii naso	forest red-tailed black cockatoo	N	Y	3.90
Zanda Calyptorhynchus	Baudin's cockatoo	N	Y	6.20
Dasyurus geoffroii	Chuditch, western quoll	N	Y	6.60

A.5. Land degradation risk table

Risk categories	*Land Unit*
Wind erosion	H2: >70% of map unit has a high to extreme wind erosion risk
Water erosion	L1: <3% of map unit has a high to extreme water erosion risk
Water repellence	M2: 30-50% of map unit has a high water repellence risk
Salinity	L1: <3% of map unit has a moderate to high salinity risk or is presently saline
Subsurface acidification	H2: >70% of map unit has a high subsurface acidification risk or is presently acid
Flood risk	L1: <3% of the map unit has a moderate to high flood risk
Water logging	L1: <3% of map unit has a moderate to very high waterlogging risk
Phosphorus export risk	L2: 3-10% of map unit has a high to extreme phosphorus export risk

Appendix B. Details of public submission

Summary of comments	Consideration of comment
Application area is an important corridor for native animals, including western ringtail possum, quenda, and black cockatoos.	Impacts to fauna are addressed in the assessment of impacts on environmental values (see section 3.2).
Concern over the impact of the Albany Motorsport Park development on groundwater, including run-off into waterways in a Public Drinking Water Source Area (Priority 2).	The impact of the Albany Motorsport Park development is outside the scope of this assessment. Impacts of the proposed clearing on water quality are addressed in the assessment against the clearing principles (see Appendix C). DWER's Water Source Protection Planning

Summary of comments	Consideration of comment
	branch advised the final land use of the application area (emergency exit road) is compatible with Priority 2 Public Drinking Water Source areas (see section 3.3.)

Appendix C. Assessment against the clearing principles

Assessment against the clearing principles	Variance level	Is further consideration required?
Environmental value: biological values		
Principle (a): *"Native vegetation should not be cleared if it comprises a high level of biodiversity."* Assessment: Given the extent and condition of the vegetation proposed to be cleared, the application area is unlikely to comprise a high level of biodiversity.	Not likely to be at variance	Yes *Refer to Section 3.2.1 and 3.2.2 above.*
Principle (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."* Assessment: The application area contains habitat for conservation significant fauna.	At variance	Yes *Refer to Section 3.2.1, above*
Principle (c): *"Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora."* Assessment: Given the extent of clearing, condition of the vegetation proposed to be cleared and the distribution and extent of existing records, the application area is unlikely to comprise significant habitat for conservation significant flora.	Not likely to be at variance	Yes *Refer to Section 3.2.2, above.*
Principle (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."* Assessment: The area proposed to be cleared does not contain species that indicate a threatened ecological community.	Not likely to be at variance	No
Environmental value: significant remnant vegetation and conservation areas		
Principle (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."* Assessment: The extent of native vegetation in the local area is inconsistent with the national objectives and targets for biodiversity conservation in Australia. The vegetation proposed to be cleared is part of a mapped ecological linkage and is a remnant of native vegetation within an extensively cleared local area.	At variance	Yes *Refer to Section 3.2.3, above.*
Principle (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."* Assessment: Given the distance to the nearest conservation area, the proposed clearing is not likely to have an impact on the environmental values of any conservation areas.	Not likely to be at variance	No

Environmental value: land and water resources		
Principle (f): *"Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland."* Assessment: Given no water courses or wetlands are recorded within the application area, the proposed clearing is unlikely to impact on- or off-site hydrology and water quality.	Not at variance	No
Principle (g): *"Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation."* Assessment: The mapped soils are highly susceptible to wind erosion and subsurface acidification. Noting the extent and the condition of the vegetation within the application area, the proposed clearing is not likely to have an appreciable impact on land degradation.	Not likely to be at variance	No
Principle (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."* Assessment: The application area is located within the Albany Groundwater Area as proclaimed under the *Rights in Water and Irrigation Act 1914* (RIWI Act) and the Public Drinking Water Marellup Brook Catchment Area (Priority 2). DWER's Water Source Protection Planning branch advised the final land use of the application area (emergency exit road) is compatible with Priority 2 Public Drinking Water Source areas. Given no watercourses or wetlands occur within the application area, and noting the size and condition of the vegetation, the proposed clearing is unlikely to impact surface or groundwater quality.	Not likely to be at variance	Yes *Refer to Section 3.3, above.*
Principle (j): *"Native vegetation should not be cleared if the clearing of the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding."* Assessment: The mapped soils in the surrounding area do not indicate the proposed clearing is likely to contribute to increased incidence or intensity of flooding. Given no natural or permanent water courses or wetlands are recorded within the application area, the proposed clearing is unlikely to contribute to waterlogging.	Not likely to be at variance	No

Appendix D. Vegetation condition rating scale

Vegetation condition is a rating given to a defined area of vegetation to categorise and rank disturbance related to human activities. The rating refers to the degree of change in the vegetation structure, density and species present in relation to undisturbed vegetation of the same type. The degree of disturbance impacts upon the vegetation's ability to regenerate. Disturbance at a site can be a cumulative effect from a number of interacting disturbance types.

Considering its location, the scale below was used to measure the condition of the vegetation proposed to be cleared.

This scale has been extracted from Keighery, B.J. (1994) *Bushland Plant Survey: A Guide to Plant Community Survey for the Community*. Wildflower Society of WA (Inc). Nedlands, Western Australia.

Measuring vegetation condition for the South West and Interzone Botanical Province (Keighery, 1994)

Condition	Description
Pristine	Pristine or nearly so, no obvious signs of disturbance.
Excellent	Vegetation structure intact, with disturbance affecting individual species; weeds are non-aggressive species.

Condition	Description
Very good	Vegetation structure altered, with obvious signs of disturbance. For example, disturbance to vegetation structure caused by repeated fires, the presence of some more aggressive weeds, dieback, logging and/or grazing.
Good	Vegetation structure significantly altered by very obvious signs of multiple disturbances. Retains basic vegetation structure or ability to regenerate it. For example, disturbance to vegetation structure caused by very frequent fires, the presence of some very aggressive weeds at high density, partial clearing, dieback and/or grazing.
Degraded	Basic vegetation structure severely impacted by disturbance. Scope for regeneration but not to a state approaching good condition without intensive management. For example, disturbance to vegetation structure caused by very frequent fires, the presence of very aggressive weeds, partial clearing, dieback and/or grazing.
Completely degraded	The structure of the vegetation is no longer intact and the area is completely or almost completely without native species. These areas are often described as 'parkland cleared' with the flora comprising weed or crop species with isolated native trees or shrubs.

Appendix E. Offset Calculation and Justification

Offset calculation and justification for significant residual impact to western ringtail possums.

Calculation	Score (Area)	Rationale
Conservation significance		
Description	Western ringtail possum	Application area contains suitable habitat for *Pseudocheirus occidentalis* (western ringtail possum).
Type of environmental value	Species (Flora/Fauna)	Suitable habitat for western ringtail possums (WRP)
Conservation significance of environmental value	Rare/Threatened Species – critically endangered	The western ringtail possum is listed as critically endangered under the *Biodiversity Conservation Act 2016* and *Environment Protection and Biodiversity Conservation Act 1999*
Landscape level value impacted	Yes/No	Yes
Significant impact		
Description	-	Providing habitat connectivity for western ringtail possums
Significant impact (hectares)	0.02	0.02 hectares of western ringtail possum habitat will be impacted by the clearing
Quality (scale)	7	The vegetation under application provides significant habitat connectivity for western ringtail possums, with multiple known records in the local area (i.e. the application area likely supports a local population of WRP).
Rehabilitation credit		
N/A	N/A	Onsite revegetation will not be taking place
Offset		
Description	Conservation covenant	Conservation covenant to be placed over proposed offset site
proposed offset (area in hectares)	0.2	The area required to be protected to counterbalance 100% of significant residual impact of the proposed clearing
Current quality of offset site	7	Native vegetation to be protected occurs in very good (Keighery 1994) or better condition and provides suitable habitat for western ringtail possums
Future quality WITHOUT offset	7	It is considered that the quality of the habitat within the offset site will not change

Calculation	Score (Area)	Rationale
Future quality WITH offset	7	No on ground management is proposed as part of the offset. The offset site quality is not considered to improve beyond its current quality.
Time until ecological benefit (years)	1	One year to add conservation covenant
Confidence in offset result (%)	90	90% confidence of the result of the offset proposal
Duration of offset implementation (maximum 20 years)	20	Maximum value to be used. Offset site will be conserved in perpetuity.
Time until offset site secured (years)	1	One year to add conservation covenant
Risk of future loss WITHOUT offset (%)	15%	There is a moderate risk of loss of the offset site considering that it is zoned rural.
Risk of future loss WITH offset (%)	5%	Conserving the offset site under a conservation covenant will reduce the risk of loss.
Offset ratio (Conservation area only)	N/A	
Landscape level values of offset?	N/A	

Offset calculation and justification for significant residual impact to remnant vegetation.

Calculation	Score (Area)	Rationale
Conservation significance		
Description		Application area is a significant remnant of native vegetation within an extensively cleared landscape and provides important linkage value for fauna in the local area
Type of environmental value	Vegetation/habitat	Remnant vegetation within an extensively cleared landscape
Conservation significance of environmental value	Terrestrial native vegetation complex - <30% extent remaining in the bioregion	There is approximately 23.27% native vegetation remaining within the local area
Landscape level value impacted	Yes/No	Yes
Significant impact		
Description		Removing native vegetation within an extensively cleared landscape
Significant impact (hectares)	0.02	0.02 hectares of native vegetation considered a significant remnant of native vegetation in an extensively cleared landscape
Quality (scale)	4	The application area is in good to degraded condition
Rehabilitation credit		
N/A	N/A	Onsite revegetation will not be taking place
Offset		

Calculation	Score (Area)	Rationale
Description	Conservation covenant	Conservation covenant to be placed over proposed offset site
proposed offset (area in hectares)	0.11	The area required to be protected to counterbalance 100% of significant residual impact of the proposed clearing
Current quality of offset site	7	Native vegetation to be protected occurs in very good (Keighery, 1994) or better condition.
Future quality WITHOUT offset	7	It is considered that the quality of the habitat within the offset site will not change
Future quality WITH offset	7	No on ground management is proposed as part of the offset. The offset site quality is not considered to improve beyond its current quality.
Time until ecological benefit (years)	1	One year to add conservation covenant
Confidence in offset result (%)	90	90% confidence of the result of the offset proposal
Duration of offset implementation (maximum 20 years)	20	Maximum value to be used. Offset site will be conserved in perpetuity.
Time until offset site secured (years)	1	One year to add conservation covenant
Risk of future loss WITHOUT offset (%)	15%	There is a moderate risk of loss of the offset site considering that it is zoned rural.
Risk of future loss WITH offset (%)	5%	Conserving the offset site under a conservation covenant will reduce the risk of loss.
Offset ratio (Conservation area only)	N/A	
Landscape level values of offset?	N/A	

Appendix F. Representative photographs of the vegetation



DOWN ROAD SOUTH – NORTH EAST EMERGENCY EXIT AREA



CLEARING AREA PHOTOS - EMERGENCY EGRESS





OFFSET AREA PHOTOS

Appendix G. Sources of information

G.1. GIS databases

Publicly available GIS Databases used (sourced from www.data.wa.gov.au):

- 10 Metre Contours (DPIRD-073)
- Aboriginal Heritage Places (DPLH-001)
- Aboriginal Heritage Places (DPLH-001)
- Cadastre (LGATE-218)
- Cadastre Address (LGATE-002)
- Contours (DPIRD-073)
- DBCA – Lands of Interest (DBCA-012)
- DBCA Legislated Lands and Waters (DBCA-011)
- Directory of Important Wetlands in Australia – Western Australia (DBCA-045)
- Environmentally Sensitive Areas (DWER-046)
- Flood Risk (DPIRD-007)
- Groundwater Salinity Statewide (DWER-026)
- Hydrography – Inland Waters – Waterlines
- Hydrological Zones of Western Australia (DPIRD-069)

- IBRA Vegetation Statistics
- Imagery
- Local Planning Scheme – Zones and Reserves (DPLH-071)
- Native Title (ILUA) (LGATE-067)
- Offsets Register – Offsets (DWER-078)
- Pre-European Vegetation Statistics
- Public Drinking Water Source Areas (DWER-033)
- Ramsar Sites (DBCA-010)
- Regional Parks (DBCA-026)
- Remnant Vegetation, All Areas
- RIWI Act, Groundwater Areas (DWER-034)
- RIWI Act, Surface Water Areas and Irrigation Districts (DWER-037)
- Soil Landscape Land Quality – Flood Risk (DPIRD-007)
- Soil Landscape Land Quality – Phosphorus Export Risk (DPIRD-010)
- Soil Landscape Land Quality – Subsurface Acidification Risk (DPIRD-011)
- Soil Landscape Land Quality – Water Erosion Risk (DPIRD-013)
- Soil Landscape Land Quality – Water Repellence Risk (DPIRD-014)
- Soil Landscape Land Quality – Waterlogging Risk (DPIRD-015)
- Soil Landscape Land Quality – Wind Erosion Risk (DPIRD-016)
- Soil Landscape Mapping – Best Available
- Soil Landscape Mapping – Systems

Restricted GIS Databases used:

- ICMS (Incident Complaints Management System) – Points and Polygons
- Threatened Flora (TPFL)
- Threatened Flora (WAHerb)
- Threatened Fauna
- Threatened Ecological Communities and Priority Ecological Communities
- Threatened Ecological Communities and Priority Ecological Communities (Buffers)

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