



CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

PERMIT DETAILS

Area Permit Number: CPS 9161/1
File Number: DWERVT7238
Duration of Permit: From 22 July 2021 to 22 July 2023

PERMIT HOLDER

The Shire of Mundaring

LAND ON WHICH CLEARING IS TO BE DONE

Dibble Street Road Reserve (PIN 11464082), Mount Helena

AUTHORISED ACTIVITY

The permit holder must not clear more than 0.266 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. Directional clearing

The permit holder must conduct clearing activities in a slow, progressive manner towards adjacent *native vegetation* to allow fauna to move into adjacent *native vegetation* ahead of the clearing activity.

4. 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	<ul style="list-style-type: none"> (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 Geocentric Datum Australia 1994 (GDA94), 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); and (e) actions taken to avoid, minimise, and reduce the impacts and extent of clearing in accordance with condition 1; and (f) actions taken to minimise the risk of the introduction and spread of weeds and dieback in accordance with condition 2. (g) direction of clearing in accordance with condition 3.

5. Reporting

The permit holder must provide to the *CEO* the records required under condition 4 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 <i>Environmental Protection Act 1986</i> .
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.
dieback	means the effect of <i>Phytophthora</i> species on native vegetation.
department	means the department established under section 35 of the <i>Public Sector Management Act 1994</i> (WA) and designated as responsible for the administration of the EP Act, which includes Part V Division 3.
EP Act	<i>Environmental Protection Act 1986</i> (WA)
native vegetation	has the meaning given under section 3(1) and section 51A of the EP Act.
weeds	means any plant – (a) that is a declared pest under section 22 of the <i>Biosecurity and Agriculture Management Act 2007</i> ; 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.

END OF CONDITIONS



Mathew Gannaway
MANAGER
NATIVE VEGETATION REGULATION

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

28 June 2021

SCCHEDULE 1

The boundary of the area authorised to be cleared is shown in the map below (**Plan 9161/1**

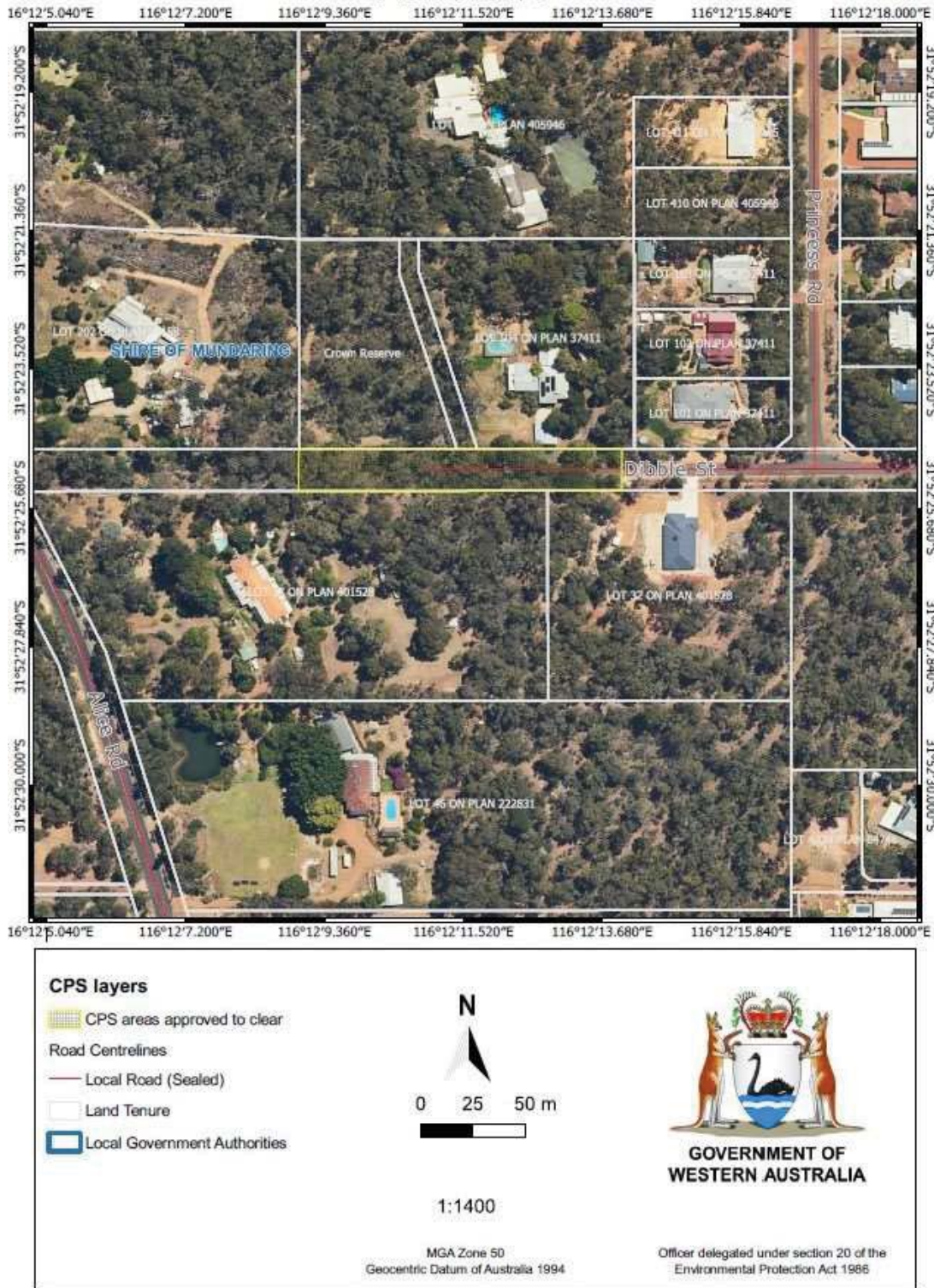


Figure 1).

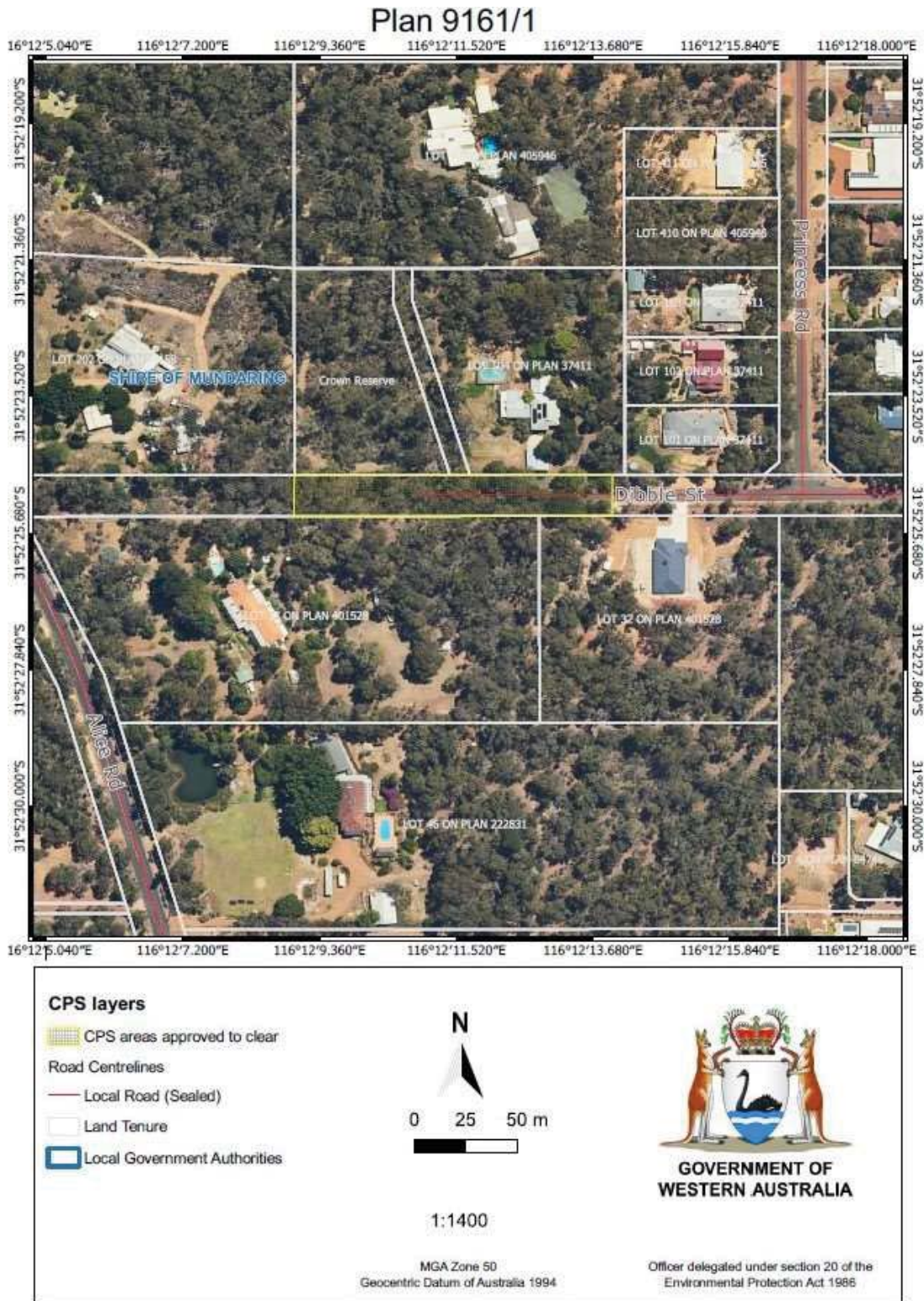


Figure 1: Map of the boundary of the area within which clearing may occur



Clearing Permit Decision Report

1 Application details and outcome

1.1. Permit application details

Permit number:	CPS 9161/1
Permit type:	Area permit
Applicant name:	Shire of Mundaring
Application received:	23 December 2020
Application area:	0.266 hectares of native vegetation
Purpose of clearing:	Road extension to provide access for emergency and operational services
Method of clearing:	Mechanical
Property:	Dibble Street Road Reserve (PIN 11464082)
Location (LGA area/s):	Shire of Mundaring
Localities (suburb/s):	Mount Helena

1.2. Description of clearing activities

The proposed clearing is to extend the road and drain from Dibble street and provide access for emergency and operational services. The vegetation applied to be cleared is contained within a single contiguous area, forming part of a woodland mosaic within a semi-rural area (see Figure 1, Section 1.5). The clearing will involve the removal of 0.266 hectares of native vegetation.

1.3. Decision on application

Decision:	Granted
Decision date:	28 June 2021
Decision area:	0.266 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 21 days and no submissions were received.

In making this decision, the Delegated Officer had regard for the site characteristics (see Appendix A), relevant datasets (see Appendix E.1), the findings of a tree and vegetation assessment (see Appendix D), the clearing principles set out in Schedule 5 of the EP Act (see Appendix B), relevant planning instruments and any other matters considered relevant to the assessment (see Section 3).

The assessment identified that the proposed clearing will result in:

- The loss of native vegetation that contains suitable foraging habitat for *Calyptorhynchus baudinii*, (Baudin's cockatoo), *Calyptorhynchus latirostris* (Carnaby's cockatoo), *Calyptorhynchus banksii* subsp. *naso* (Forest red-tailed cockatoo), *Isoodon fusciventer*. (quenda), *Phascogale tapoatafa wambenger* (south-western

brush-tailed phascogale), *Dasyurus geoffroii* (chuditch), *Pseudocheirus occidentalis* (Western ringtail possum) and *Bettongia penicillata ogilbyi* (Woylie, brush-tailed bettong).

- The loss of native vegetation that may also contain suitable habitat for *Acanthophis antarcticus* (southern death adder) and *Ctenotus delli* (Dell's skink).
- The potential introduction and spread of weeds and dieback into adjacent vegetation, which could impact to the quality of the adjacent vegetation and its habitat values.

The Delegated Officer considered that the loss of foraging and breeding habitat within the application area was not significant due to its location within an extensively vegetated landscape, the occurrence of breeding and foraging habitat of better quality adjacent to the application area and the applicant will be retaining some trees within the road reserve. No impacts for flora or vegetation of conservation significance or and ecological linkage will occur.

After consideration of the available information, as well as the applicant's minimisation and mitigation measures (see Sections 3.1), the Delegated Officer decided to grant a clearing permit subject to the following requirements conditioned on the clearing permit, to manage and address the impacts of clearing:

- Undertake slow, progressive clearing towards adjacent native vegetation, allowing terrestrial fauna to move into adjacent habitat ahead of the clearing activity.
- Take hygiene steps to minimise the risk of the introduction and spread of weeds and dieback.

1.5. Site Map

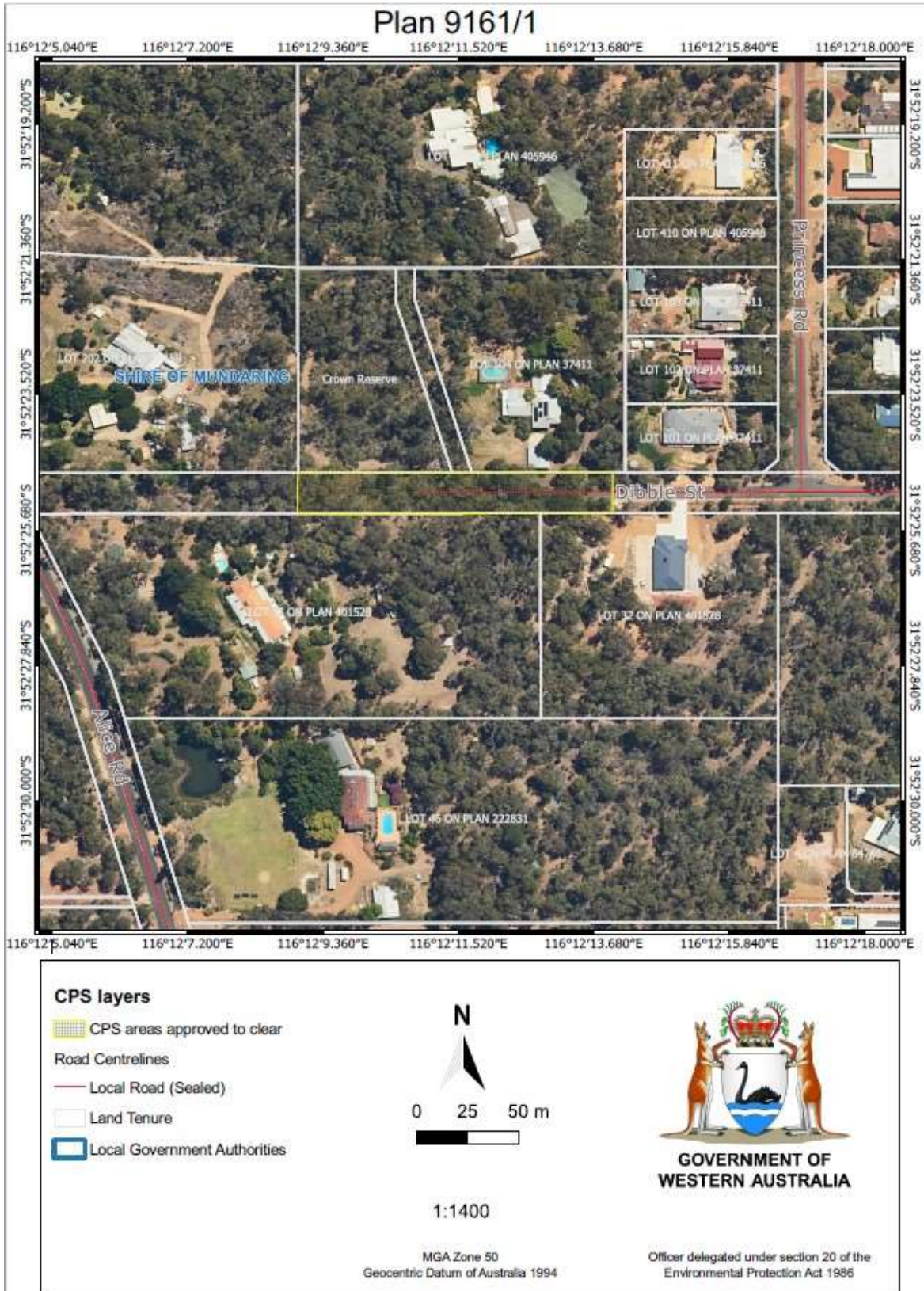


Figure 1 Map of the application area

The area crosshatched 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 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)
- *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act)
- *Planning and Development Act 2005* (WA) (P&D Act)

The key guidance documents which inform this assessment are:

- *A guide to the assessment of applications to clear native vegetation* (DER 2013)
- *Procedure: Native vegetation clearing permits* (DWER 2019)

3 Detailed assessment of the application

3.1. Avoidance and mitigation measures

The applicant has stated that only selected trees will be removed (Shire Mundaring 2020), however it is not possible to identify which trees will be retained pre-clearing, as the position of the drain into Rocky Gully Creek can only be determined once clearing commences and the topography of the ground can be surveyed (Shire of Mundaring 2021a). The Delegated Officer was satisfied that the applicant has made a reasonable effort to avoid and minimise potential impacts of the proposed clearing on environmental values.

3.2. Assessment of impacts on environmental values

In assessing the application, the Delegated Officer has had regard for the site characteristics (see Appendix A) 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 Appendix B) identified that the impacts of the proposed clearing present a risk to conservation significant fauna. 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. Biological values, Clearing Principle (b)

Assessment

According to available datasets, *Calyptorhynchus baudinii* (Baudin's cockatoo), *Calyptorhynchus banksii naso* (Forest red-tailed cockatoo) and *Calyptorhynchus latirostris* (Carnaby's cockatoo) have been recorded within 1.3 kilometres from the application area.

Twenty-seven black cockatoo roosts have been recorded within the local area. Black cockatoo roost sites are usually located in the tallest trees within a landscape, and in proximity to a food and water supply (Commonwealth of Australia, 2017). Black cockatoo flocks will utilise different roosts, often for weeks, or until the local food supply is exhausted. Black cockatoo flocks show some consistency in roost site preference, with sites used in most years to access high-quality feeding sites. However, not all roosts are used in every year (DPAW, 2013). Foraging resources within 6 kilometres, and up to 12 kilometres of roost sites are important to sustain populations (Commonwealth of Australia 2017). The nearest roost is recorded 0.73 kilometres from the application area. Noting this, the vegetation proposed to be cleared likely provides foraging resource to black cockatoos utilising this roost. Based on available databases, this mapped roost site is adjacent to approximately 20157.4 hectares of native vegetation, mapped as black cockatoo feeding habitat, available within the local area, including portions of Beelu and John Forest National Parks. The loss of 0.266 hectares of foraging habitat in a highly vegetated landscape is unlikely to significantly impact foraging and roosting habitat for black cockatoo species.

Four white tailed black cockatoo breeding sites are recorded in the local area, this includes a cluster of three sites all approximately 4 kilometres west of the application area and one confirmed red tail black cockatoo breeding site occurs approximately 0.5 kilometres to the north-east of the application area. Suitable breeding habitat for black

cockatoos include trees which either have a suitable nest hollow, or of a suitable diameter at breast height (DBH) to develop a nest hollow. For most tree species, including jarrah and marri trees, a DBH of at least 500 millimetres is required to develop hollows of suitable size for use by black cockatoos (Commonwealth of Australia, 2012). An assessment of trees within the application area (see Appendix D, Table D.1.) was carried out by the Shire of Mundaring (2021b). No trees with a sufficient DBH or contained a hollow of a sufficient size were identified.

According to available datasets, the vegetation within the application area may provide suitable breeding or foraging habitat for a number of fauna, including arboreal marsupials such as *Phascogale tapoatafa wambenger* (south-western brush-tailed phascogale), *Dasyurus geoffroii* (chuditch) and *Pseudocheirus occidentalis* (Western ringtail possum). South-western brush-tailed phascogale, breed in tree hollows. The tree inspection found one small hollow beginning to form, on a single tree (Shire of Mundaring 2020). Photographs provided by the applicant indicate that this tree hollow is too small to provide nesting habitat for South-western brush-tailed phascogale (see Appendix D photo 5). Chuditch has been recorded 0.79 kilometres from the proposed clearing and has 71 records in the local area. Chuditch breed in dens, which can be located in hollow logs, tree limbs, rocky outcrops and burrows (DEC 2012). Photographs provided by the applicant and the tree inspection did identify any hollow logs or tree limbs in the application area. Four records for Western ringtail possum occur in the local area with the nearest record 6.3 kilometres from the proposed clearing. Western ringtail possum nest in dreys constructed in the tree canopy, however no dreys were recorded in the application area.

The proposed clearing may also impact habitat for ground dwelling conservation significant fauna, such as *Isoodon fusciventer* (quenda), *Bettongia penicillata ogilbyi* (Woylie, brush-tailed bettong), *Ctenotus delli* (Dell's skink), and *Acanthophis antarcticus* (southern death adder), as it is possible the home range of the above species, could include the application area. Given the small size of the application area (0.266 hectares), and the availability of more extensive, similar quality vegetation adjoining the application area, the proposed clearing is unlikely to significantly impact the available habitat for the above species.

Conclusion

Based on the above assessment, the proposed clearing will result in the loss of foraging habitat for black cockatoo species. Suitable breeding habitat for black cockatoos is not present in the application area. Other arboreal and ground dwelling conservation significant fauna may utilise the application area. However, given the small size of the application area, and the availability of the suitable habitat provided by adjacent vegetation, the proposed clearing will not result in a significant loss of habitat for the above fauna species. The Potential direct impact to fauna, present at the time of clearing, may be managed by the implementation of a fauna management condition.

Conditions

To address the above impacts, a condition will be placed on the permit, requiring the permit holder to conduct directional clearing to allow terrestrial fauna to move into adjacent habitat ahead of the clearing activity.

Relevant planning instruments and other matters


No Aboriginal sites of significance have been mapped within the application area. 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.

The DWER advertised the application for 21 days on 21 January 2021. No submissions were received in relation to this application.

Appendix A. Site characteristics

A.1. Site characteristics

Characteristic	Details
Local context	The application area is part of a larger tract of woodland on the western edge of a rural residential estate. Spatial data indicates the local area (10-kilometre radius from the perimeter of the application area) retains approximately 70 per cent of pre-European native vegetation cover.
Ecological linkage	The application area is an informal part of a road conservation linkage between surrounding areas of remnant native vegetation, including Mundaring State Forest to the south and Leschenaultia Conservation Park in the east. However, the proposed clearing is not likely to sever or reduce the functionality of this linkage.

Characteristic	Details
Conservation areas	Beelu National Park and John Forrest National Park occur 5.2 and 8.3 kilometres to the Southwest and west respectively. The Woorlooo regional Park covers a number of areas to the south and east of the proposed clearing including Leschenaultia Conservation Park 1.8 kilometres to the east.
Vegetation description	<p>Photographs supplied by the applicant (Shire of Mundaring 2020) indicate the vegetation within the proposed clearing area consists of <i>Eucalyptus marginata</i> subsp. <i>marginata-Corymbia calophylla</i> woodland. Representative photos are available in Appendix D.</p> <p>This is consistent with the mapped vegetation type:</p> <ul style="list-style-type: none"> • Yarragil 1, described as an open forest of <i>Eucalyptus marginata</i> subsp. <i>marginata-Corymbia calophylla</i> on slopes with mixtures of <i>Eucalyptus patens</i> and <i>Eucalyptus megacarpa</i> on the valley floors in humid and subhumid zones. (Government of Western Australia, 2019). <p>The mapped vegetation complex retains approximately 80.9 per cent of its original extent (Government of Western Australia 2019).</p>
Vegetation condition	<p>Photographs supplied by the applicant (Shire of Mundaring 2020) indicate the vegetation within the proposed clearing area is in Good (Keighery, 1994) to Excellent (Keighery, 1994) condition.</p> <p>The full Keighery (1994) condition rating scale is provided in Appendix C. Representative photos are available in Appendix D.</p>
Climate and landform	<ul style="list-style-type: none"> • Mean annual rainfall: 1065 millimetres • Temperature (mean annual minimum): 21.7 degrees centigrade • Temperature (mean annual maximum): 23.4 degrees centigrade <p>Landform: Darling Plateau System. Lateritic plateau. Duplex sandy gravels, loamy gravels and wet soils. Jarrah-marri-wandoo forest and woodland.</p>
Soil description	<p>The soil is mapped as:</p> <ul style="list-style-type: none"> • Dwellingup 2 Phase: Very gently to gently undulating terrain (<10%) with well drained, shallow to moderately deep gravelly brownish sands, pale brown sands and earthy sands overlying lateritic duricrust. • Yarragil 1 Phase: Very gentle to moderately inclined concave side slopes. Moderately well drained yellow duplex soils and yellow and brown massive earths and gravels. Woodland of <i>E. wandoo</i>, <i>E. marginata</i>, <i>E. accedens</i>. <i>Casuarina obesa</i> on salt affected areas.
Land degradation risk	The soil type mapped within the application area has a low risk of water erosion, salinity, waterlogging, flooding, and phosphorus export risk. However, has high susceptibility to subsurface acidification and wind erosion.
Waterbodies	 <p>Figure 2. The minor non-perennial Rocky Gully Creek (light blue line) runs north to south 100 meters west of the application area (blue cross hatch).</p>

Characteristic	Details
	<p>A drain is present within the application area, at the end of Dibble Street flows west into Rocky Gully Creek (see Appendix D, Photos12 and13).</p> <p>No riparian vegetation was observed within the drain in the photographs supplied by the applicant (Shire of Mundaring 2020).</p>
Hydrogeography	<p>The application area falls within the RIWI Act, Surface Water Areas and Irrigation Districts (DWER-037).</p> <p>The application area falls within the western darling range hydrological zone. Groundwater discharge may occur in drainage lines and on valley floors in cleared catchments within the hydrozone. Aquifers are local only a few kilometres. Groundwaters in the hydrozone range from fresh to saline but are predominantly brackish.</p>
Flora	<p>According to available databases, there are 25 conservation significant flora in the local area including 21 Priority flora and four Threatened flora. The nearest record is for the Priority 3 species <i>Beaufortia purpurea</i>, 0.85 kilometres from the application area. The four threatened flora species include:</p> <ul style="list-style-type: none"> • <i>Acacia aphylla</i>; associated with gannet outcropping. The Nearest record 4.7 kilometres from the application area. • <i>Anthocercis gracilis</i>; associated with gannet outcropping. • <i>Grevillea flexuosa</i>; associated with gannet outcropping and breakaways, in wandoo woodland. Occurs 3.4 kilometre from the application area. • <i>Thelymitra dedmaniarum</i>; associated with open wandoo woodland, on sloping well drained soil, (limited range). Occurs 8.35 kilometre from the application area. <p>See Appendix A3 for further analysis of Priority flora most likely to occur within the application area.</p>
Ecological communities	<p>The priority 4 priority ecological community: Central Northern Darling Scarp Granite Shrubland Community is located 8.5 kilometres to the west of the application area.</p>
Fauna	<p>According to available databases, a total of 24 conservation significant fauna species have been recorded in the local area. Due to the site context (in a rural residential estate) which consists of dissected vegetation, the application area has been determined to be unsuitable to support species with larger space requirements, such as <i>Myrmecobius fasciatus</i> (numbat) and <i>Macrotis lagotis</i> (bilby).</p> <p>Black cockatoo habitat within the local area includes:</p> <ul style="list-style-type: none"> • Four white tailed black cockatoo breeding sites, this includes a cluster of three sites all approximately 4 kilometres west of the application area. The remaining mapped breeding site is 6.2 kilometres from the application area. • One confirmed red tail black cockatoo breeding site is occurring approximately 0.5 kilometres to the north-east of the application area. • A total of 27 black cockatoo roosts sites. The nearest is 0.73 kilometres south-east of the application area. • Approximately 90 percent of all remnant vegetation in the local area, is mapped as cockatoo feeding habitat. <p>Habitat suitability analysis is provided in Appendix A.4.</p>

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					
Yarragil 1	80202.95	64927.06	80.95	59063.57	73.64
Local area					
10km radius	31715.45	22397.12	70.61	-	-

Government of Western Australia (2019)

A.3. Flora analysis table

With consideration for the site characteristics set out above, relevant datasets (see Appendix E.1), and images provided by the applicant (Shire of Mundaring 2020, see Appendix D), impacts to the following conservation significant flora required further consideration.

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)	Number of known records (total)	Are surveys adequate to identify? [Y, N, N/A]
<i>Beaufortia purpurea</i>	P3	Yes	Yes	Yes	0.85	1	Yes
<i>Meionectes tenuifolia</i>	P3	No	No	Yes	2.42	2	Yes
<i>Boronia tenuis</i>	P4	No	Yes	Yes	2.92	2	Yes
<i>Adenanthos cygnorum</i> subsp. <i>chamaephyton</i>	P4	Yes	Yes	Yes	4.46	6	Yes
<i>Grevillea pimeleoides</i>	P4	Yes	Yes	Yes	4.46	5	Yes
<i>Lasiopetalum bracteatum</i>	P4	No	Yes	Yes	4.46	2	Yes
<i>Senecio leucoglossus</i>	P4	No	Yes	No	5	1	Yes
<i>Thelymitra variegata</i>	P2	Yes	Yes	No	5	1	Yes
<i>Cyanicula ixioides</i> subsp. <i>ixioides</i>	P4	Yes	Yes	Yes	7.9	1	Yes
<i>Grevillea manglesii</i> subsp. <i>ornithopoda</i>	P2	Yes	Yes	Yes	9.1	1	Yes
<i>Stylidium striatum</i>	P4	Yes	No	Yes	9.1	1	Yes
<i>Thysanotus anceps</i>	P3	Yes	Yes	Yes	9.7	2	Yes

T: threatened, CR: critically endangered, EN: endangered, VU: vulnerable, P: priority

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)	Number of known records (total)	Are surveys adequate to identify? [Y, N, N/A]
<i>Calyptorhynchus baudinii</i> (Baudin's cockatoo)	EN	Yes	Yes	0.48	127*	Yes
<i>Isoodon fusciventer</i> (quenda)	P4	Yes	Yes	0.57	348	Yes
<i>Calyptorhynchus banksii naso</i> (forest red-tailed black cockatoo)	VU	Yes	Yes	0.798	234	Yes
<i>Phascogale tapoatafa wambenger</i> (south-western brush-tailed phascogale)	CD	Yes	Yes	7.1	27	Yes
<i>Dasyurus geoffroii</i> (chuditch)	Vu	Yes	Yes	0.79	71	Yes
<i>Calyptorhynchus latirostris</i> (Carnaby's cockatoo)	EN	Yes	Yes	1.3	200*	Yes
<i>Ctenotus delli</i> (Dell's skink)	P4	yes	yes	4.4	7	Yes
<i>Acanthophis antarcticus</i> (southern death adder)	P3	yes	yes	4.4	4	Yes
<i>Bettongia penicillata ogilbyi</i> (Woylie, brush-tailed bettong)	CR	yes	yes	6	87	Yes
<i>Pseudocheirus occidentalis</i> (Western ringtail possum)	CR	yes	yes	6.3	4	Yes
<i>Synemon gratiosa</i> (graceful sunmoth)	P4	Yes	Yes	9.4	1	Yes

T: threatened, CR: critically endangered, EN: endangered, VU: vulnerable, CD: Conservation Dependent Fauna
P: priority

* The local area also includes 139 records for *Calyptorhynchus* spp. 'white-tailed black cockatoo' observations.

A.5. Land degradation risk table

Risk categories	Dwellingup 2 Phase	Yarragil 1 Phase
Wind erosion	>70% of map unit has a high to extreme wind erosion risk	10-30% of map unit has a high to extreme wind erosion risk
Water erosion	<3% of map unit has a high risk	<3% of map unit has a high risk
Salinity	<3% of map unit has a high risk	<3% of map unit has a high risk
Subsurface Acidification	50-70% of map unit has a high to extreme risk	50-70% of map unit has a high to extreme risk
Flood risk	<3% of map unit has a high risk	<3% of map unit has a high risk
Water logging	<3% of map unit has a high risk	<3% of map unit has a high risk
Phosphorus export risk	<3% of map unit has a high risk	10-30% of map unit has a high to extreme Phosphorus export risk

Appendix B. Assessment against the clearing principles

Assessment against the clearing principles	Variance level	Is further consideration required?
Environmental value: biological values		
<p><u>Principle (a):</u> <i>“Native vegetation should not be cleared if it comprises a high level of biodiversity.”</i></p> <p><u>Assessment:</u></p> <p>Considering the application area is limited to 0.266 hectares, the proposed clearing is unlikely to significantly impact any populations of Priority flora. Photographs supplied by the applicant (Shire of Mundaring 2020) indicate the vegetation within the application area does not contain any locally or regionally significant, fauna, habitats, or assemblages of plants.</p>	Not likely to be at variance	No
<p><u>Principle (b):</u> <i>“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.”</i></p> <p><u>Assessment:</u></p> <p>The area proposed to be cleared contains suitable foraging habitat for Black cockatoo species and a number of conservation significant fauna.</p>	May be at variance	Yes <i>Refer to Section 3.2.1, above.</i>
<p><u>Principle (c):</u> <i>“Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora.”</i></p> <p><u>Assessment:</u></p> <p>None of the four threatened flora recorded in the local area are associated with similar habitat features as is found within the application area. The area proposed to be cleared is unlikely to contain habitats suitable for Threatened flora species listed under the BC Act.</p>	Not likely to be at variance	No e.
<p><u>Principle (d):</u> <i>“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.”</i></p> <p><u>Assessment:</u></p> <p>The area proposed to be cleared does not contain species that can indicate a threatened ecological community.</p>	Not at variance	No
Environmental value: significant remnant vegetation and conservation areas		
<p><u>Principle (e):</u> <i>“Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.”</i></p> <p><u>Assessment:</u></p> <p>The extent of the mapped native vegetation in the local area is consistent with the national objectives and targets for biodiversity conservation in Australia. The vegetation proposed to be cleared is not considered to be a significant remnant.</p>	Not at variance	No
<p><u>Principle (h):</u> <i>“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.”</i></p> <p><u>Assessment:</u></p> <p>Given the distance to the nearest conservation area, Beelu National Park at 5.2 kilometres from the application area, the proposed clearing is not likely to have an impact on the environmental values of nearby conservation areas.</p>	Not at variance	No
Environmental value: land and water resources		

Assessment against the clearing principles	Variance level	Is further consideration required?
<p><u>Principle (f):</u> <i>“Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.”</i></p> <p><u>Assessment:</u></p> <p>Given the proposed clearing will be limited to 0.266 hectares it is unlikely to impact on- or off-site hydrology and water quality of the adjacent minor non-perennial water course. No vegetation growing in association with a watercourse or wetland was observed within the application area.</p>	Not at variance	No
<p><u>Principle (g):</u> <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.”</i></p> <p><u>Assessment:</u></p> <p>Noting the proposed clearing is for 0.266 hectares within an extensively vegetated landscape, the proposed clearing is not likely to cause appreciable land degradation. Storm water from Dibble Street flows through the application area via a drain (see Appendix D, photos 12 and 13). The proposed clearing may increase water erosion at the time of clearing, however impacts are likely to be minimal and short term..</p>	Not at variance	No
<p><u>Principle (i):</u> <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.”</i></p> <p><u>Assessment:</u></p> <p>Given no wetlands, and/or Public Drinking Water Sources Areas are recorded within the application area, the proposed clearing is unlikely to impact surface or ground water quality.</p>	Not at variance	No
<p><u>Principle (j):</u> <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.”</i></p> <p><u>Assessment:</u></p> <p>Noting the size of the proposed clearing with the mapped soils having a very low risk of flooding and waterlogging, the proposed clearing is not likely to result in increased flooding,</p>	Not likely to be at variance	No

Appendix C. 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.
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 D. Representative photographs of the vegetation and tree hollow inspection

Information Provided by Shire of Mundaring (2020) are representative of the vegetation observed within the application area.

February 2021

Dibble Street Extension - Princess Rd to Alice Rd, Mount Helena

Vegetation and Tree Assessment



Photo 1 (left): *Corymbia calophylla* (Marri) tree #1 approximate 90cm in diameter.

Marri canker in some of the branches and no hollows visible.



Photos 2 (left) and 3 (right): Weedy vegetation of Flinders Range and Queensland silver wattle located in the vicinity of tree #1 and in the eastern portion of the road reserve.



Photo 4 (left): Trees number (#2) *Corymbia calophylla*, (#3) *Eucalyptus marginata*, and (#4) *Eucalyptus marginata* Jarrah.

Photo 5 (right): Jarrah tree (#3) with a small hollow starting to form.



Photo 6 (left): *Eucalyptus marginata* Jarrah tree #5. Approximately 30cm in diameter.

Photo 7 (right): *Corymbia calophylla* (Marri) tree #6. Approximately 30cm in diameter.



Photo 8 (left): *Eucalyptus marginata* Jarrah tree #7 and *Corymbia calophylla* (Marri) tree #8.

No hollows in either tree with both trees being under 50cm in diameter.



Photo 9: Vegetation to the west of tree #2. This is good remnant vegetation that consists of a native canopy of Marri and Jarrah trees (mostly regrowth), middle storey of *Banksia sessilis*, grass trees and hakea species with a native understorey.



Photo 10: Alternative view of vegetation in the road reserve. Native species of (*Xanthorrhoea*, *Banksia*, *Hakea*, *Bossiaea* species etc). Some weeds species also present (woody wattles, tagasaste).



Photo 11(left): Vegetation in the road reserve, along the boundary of 510 Alice Rd Mt Helena.



Photos 12 and 13: Drainage channel from Dibble Street that continues in a westerly direction and into the road reserve. In the road reserve a defined channel has developed and shows the favoured path for water movement. Road construction will increase the water movement and erosion needs to be controlled to minimise sediment pollution into

Rocky Gully. It is recommended that an Erosion and Sediment control plan is in place (during and post construction) to prevent downstream sedimentation.



Photo 14: Locations of proposed trees to be removed for Dibble Street road construction.

D.1. Assessment of Jarrah and Marri trees within the application area (Shire of Mundaring 2020)

Proposed trees to be removed for Dibble Street road construction									
If diameter at breast height (DBH) exceeds 50cm, record in table below:									
Tree #	Tree species	Easting (x)	Northing (y)	GPS (+/-)	Trunk Diameter / DBH (cm)	Tree health	Tree condition	Hollows/Comments	Photo
1	Marri	424663	6473299	+/-5m	90cm	alive	good condition	Canker in some branches. No hollows visible	Y
2	Marri	424640	6473296	+/-5m	80-90cm	alive	good condition	No hollows visible	Y
3	Jarrah	424637	6473299	+/-5m	90cm	alive	good condition	Small hollow starting to form	Y
4	Jarrah	424635	6473302	+/-5m	60cm	alive	good condition	No hollows visible	Y
5	Jarrah	424621	6473300	+/-5m	30cm	alive	good condition	No hollows visible	Y
6	Marri	424620	6473298	+/-5m	30cm	alive	good condition	No hollows visible. Has been coppiced with new growth potentially creating a top heavy canopy.	Y
7	Jarrah	424610	6473289	+/-5m	10cm	alive	good condition	No hollows visible	Y
8	Marri	424609	6473289	+/-5m	30-40cm	alive	good condition	No hollows visible	Y

□ used GPS Datum GDA94 / MGA zone 50 for compatibility with IntraMaps.
 * If there are numerous habitat trees present then request habitat tree survey by Environmental Consultant

Note to applicant / landowner: All native vegetation must be retained and protected unless an exemption applies (such firebreaks or planning approval). Removal of native vegetation, including for the establishment of a proposed Building/Asset Protection Zone (APZ), is only permitted once Planning Approval has been issued. Refer to the Shire's brochure, 'Native Vegetation on Your Property' or contact the Environment Service Team 9290 6651 for more information.

Appendix E. Sources of information

E.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)
- Cadastre (LGATE-218)
- 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)
- Imagery
- Native Title (ILUA) (LGATE-067)
- 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)

E.2. References

Commonwealth of Australia (2017). Revised draft referral guideline for three threatened black cockatoo species: Carnaby's Cockatoo, Baudin's Cockatoo and the Forest Red-tailed Black Cockatoo

Commonwealth of Australia (2012) EPBC Act referral guidelines for three threatened black cockatoo species, Canberra.

Commonwealth of Australia (2001) *National Objectives and Targets for Biodiversity Conservation 2001-2005*, Canberra.

Department of Environment and Conservation (2012). *Chuditch (Dasyurus geoffroyi) National Recovery Plan - Wildlife Management Program No. 54*. Perth, WA: DEC. Retrieved from: <http://www.environment.gov.au/cgi-bin/sprat/public/publicshowallrps.pl>

Department of Parks and Wildlife (DPAW) (2013). Carnaby's Cockatoo (*Calyptorhynchus latirostris*) Recovery Plan. Western Australian Department of Parks and Wildlife (Now the Department of Biodiversity, Conservation and Attractions). Perth. Western Australia.

Government of Western Australia (2019) *2018 South West Vegetation Complex Statistics. Current as of March 2019*. WA Department of Biodiversity, Conservation and Attractions, Perth, <https://catalogue.data.wa.gov.au/dataset/dbca>

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

Shire of Mundaring (2021a), *Supporting information for clearing permit application CPS 9161/1*, received 16 June 2021 (DWER Ref: A2017496).

Shire of Mundaring (2021b) *Clearing permit application CPS 9161/1, Vegetation and Tree assessment* received 15 March 2021 (DWER Ref: DWERDT427570).

Shire of Mundaring (2020) *Clearing permit application CPS 916/1*, received 23 December 2020 (DWER Ref:DWERDT396581).

Western Australian Herbarium (1998-). *FloraBase - the Western Australian Flora*. Department of Biodiversity, Conservation and Attractions, Western Australia. <https://florabase.dpaw.wa.gov.au/> (Accessed 14 May 2021)