GOVERNMENT OF
WESTERN AUSTRALIA

CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

PERMIT DETAILS

Area Permit Number: CPS 9398/1

File Number: DWERVT8490

Duration of Permit: From 09 January 2022 to 09 January 2024

PERMIT HOLDER

City of Rockingham

LAND ON WHICH CLEARING IS TO BE DONE

Safety Bay Road reserve (PIN 1134955), Baldivis

AUTHORISED ACTIVITY

The permit holder must not clear more than 0.065 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	(a) 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; (b) the date that the area was cleared; (c) the direction of clearing; (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; and (f) actions taken to minimise the risk of the introduction and spread of *weeds* and *dieback* in accordance with condition 2.

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 2 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.
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)
fill	means material used to increase the ground level, or to fill a depression
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.
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.

END OF CONDITIONS

Mathew Gannaway
MANAGER
NATIVE VEGETATION REGULATION

Officer delegated under Section 20
of the Environmental Protection Act 1986

16 December 2021

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

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 9398/1
Permit type:	Area permit
Applicant name:	City of Rockingham
Application received:	19 August 2021
Application area:	0.065 hectares of native vegetation
Purpose of clearing:	Road improvement and safety
Method of clearing:	Mechanical
Property:	Safety Bay Road reserve (PIN 1134955)
Location (LGA area/s):	City of Rockingham
Localities (suburb/s):	Baldivis

1.2. Description of clearing activities

The vegetation proposed to be cleared is contained within a single contiguous area (see Figure 1, Section 1.5). The area proposed to be cleared is an approximately 50 metres long and 10 metres wide on the southern side of Safety Bay road reserve.

The application is to clear and remove all the vegetation and topsoil from the area to allow for the construction of pre-deflection (re-alignment of existing lanes) on Safety Bay Road to reduce traffic speed on approach to the roundabout and enhance safety by constructing a footpath to maintain existing pathway network along Safety Bay Road (City of Rockingham, 2021).

1.3. Decision on application

Decision:	Granted
Decision date:	16 December 2021
Decision area:	0.065 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 14 days and nil submissions were received.

In making this decision, the Delegated Officer had regard for the site characteristics (see Appendix B), photographs provided of the application area (see Appendix E), flora and vegetation survey (Appendix E), the clearing principles set out in Schedule 5 of the EP Act (see Appendix C), relevant planning instruments and any other matters considered relevant to the assessment (see Section 3).

The Delegated Officer also took into consideration the purpose of the clearing is to improve community safety by installing road pre-deflection to reduce traffic speed and minimise the number of rear-end vehicle crashed on the approach to the roundabout.

The assessment identified that the proposed clearing will result in:

- the potential introduction and spread of weeds and dieback into adjacent vegetation, which could impact on the quality of the adjacent vegetation and its values; and
- the potential for fauna individuals to be present at the time of clearing.

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 is unlikely to have long-term adverse impacts on the adjacent vegetation and can be minimised and managed to unlikely to lead to an unacceptable risk to environmental values. The applicant has suitably demonstrated avoidance and minimisation measures.

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

- 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; and
- undertake slow, progressive one directional clearing to allow terrestrial fauna to move into adjacent vegetation ahead of the clearing activity.

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 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)

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)
- Technical guidance – *Flora and Vegetation Surveys for Environmental Impact Assessment* (EPA, 2016)
- Technical guidance – *Terrestrial Fauna Surveys for Environmental Impact Assessment* (EPA, 2016)

3 Detailed assessment of application

3.1. Avoidance and mitigation measures

Another alternative was considered by the City of Rockingham, involving shifting the whole carriageway northward. However, this option was discounted as it will have substantial impact on native vegetation at the northern verge (City of Rockingham, 2021). With the pre-deflection encroaching into the southern verge, the scale of clearing of native vegetation is significantly less than clearing native vegetation at the northern verge. This selected option was chosen to reduce the extent of clearing native vegetation in this area (City of Rockingham, 2021).

Additionally, the work footprint excludes and avoids the location of a *Eucalyptus gomphocephala* (Tuart) tree featuring two hollows that could potentially provide habitat for black cockatoos (Refer to Appendix E, Figure 6).

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 B) 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 C) identified that the impacts of the proposed clearing present a risk to nearby conservation areas and the potential loss of fauna from roadkill. 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. Conservation areas - Clearing Principle (h)

Assessment

The application area is located adjacent to a Class C Reserve 27008 (five meters north) and is close to a bush forever reserve site 356 (separated by existing major roads and remnant vegetation).

The movement of material from the proposed clearing area, which would include some digging, has the potential to spread weeds and dieback into the conservation areas. Weed and dieback management will assist in ensuring that adjacent native vegetation is not impacted by the proposed clearing.

Conclusion
Based on the above assessment, the proposed clearing may increase the risk of weeds and dieback impacting areas of adjacent native vegetation.

Conditions

To address the above impacts, weed and dieback management will be required as a condition of the clearing permit to mitigate impacts to adjacent vegetation.

3.2.2. Biological values (Fauna) - Clearing Principle (b)

Assessment
The area proposed to be cleared is located adjacent to a large area of native vegetation that contains suitable habitat for fauna recorded within the local area. Whilst the clearing is not considered to contain significant foraging, roosting or breeding habitat for conservation significant fauna recorded in the local area, the application area may occasionally be inhabited by individuals moving through the landscape. The clearing activity could potentially impact individuals present at the time of clearing.

Conclusion
For the reasons set out above, it is considered that the impacts of the proposed clearing on potential fauna death can be managed by clearing towards adjacent vegetation instead of towards Safety Bay road to allow fauna to take refuge within vegetation and minimise fauna deaths.

Conditions
To address the above impacts, directional clearing will be required as a condition of the clearing permit to mitigate impacts to fauna.

3.3. Relevant planning instruments and other matters

No known 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 installation of the of pre-deflection (re-alignment of existing lanes) on Safety Bay Road is identified as a 'Black Spot' funded project (Natural Area Holdings Pty Ltd, 2021), which is designed to deliver the most cost effective treatment of hazardous road locations.

End

Appendix A. Additional information provided by applicant

Additional information provided by the applicant:

- Drawings (City of Rockingham, 2021);
- Flora and vegetation survey (Natural Area Holdings Pty Ltd, 2021); and
- Photographs and map of the clearing area (City of Rockingham, 2021).

Appendix B. Site characteristics

The information provided below describes the key characteristics of the area proposed to be cleared and is based on the best information available to DWER at the time of this assessment. This information was used to inform the assessment of the clearing against the Clearing Principles, contained in Appendix C.

B.1. Site characteristics

Characteristic	Details
Local context	The area proposed to be cleared is a 0.065 hectares patch of native vegetation in the intensive land use zone of Western Australia. The proposed clearing area is adjacent to Safety Bay road and primarily surrounded by major roads, remnant vegetation, rural, and parks and recreation land uses. Spatial data indicate the local area, defined as 10 km radius from the centre of the area proposed to be cleared, retains approximately 23.65 per cent of the original native vegetation cover.
Ecological linkage	The area proposed to be cleared does not form part of a significant mapped ecological linkage within the local area.
Conservation areas	The application area is located adjacent (five meters north) to a Class C Reserve 27008 and 62 meters northeast of a bush forever reserve site 356 and is separated by areas of remnant vegetation and existing major road networks (Mandurah and Safety Bay roads).
Vegetation description	Photographs supplied by the applicant (City of Rockingham, 2021) and the vegetation survey (Natural Area Holdings Pty Ltd, 2021) indicate the vegetation within the proposed clearing area consists of an open woodland of an open woodland *of Eucalyptus gomphocephala* over *Spyridium globulosum* and *Acacia* spp. shrubland and a weedy understory of grasses and herbs (including Perennial Veldt, Annual Veldt and Soursob). Representative photos are available in Appendix E. This description is consistent with the Cottesloe Complex-Central and South vegetation complex mapped over the application area, described as mosaic of woodland of *Eucalyptus gomphocephala* (Tuart) and open forest of *Eucalyptus gomphocephala* (Tuart) - *Eucalyptus marginata* (Jarrah) - *Corymbia calophylla* (Marri); closed heath on the Limestone outcrops (Heddle et al.1980). The mapped vegetation type retains approximately 32.16 per cent of the original extent (Government of Western Australia, 2019).
Vegetation condition	Vegetation survey (Natural Area Holdings Pty Ltd, 2021) indicates the vegetation condition within the proposed clearing area is in Completely Degraded to Degraded (Keighery, 1994), with most of the basic vegetation structures impacted from previous disturbance activities. Understory comprises of mainly weedy grass with maintained turfed lawns in the north section of the site near the roundabout (Natural Area Holdings Pty Ltd, 2021). The full Keighery (1994) condition rating scale is provided in Appendix D. Representative photos are available in Appendix E.
Climate and landform	The application area is on the northern extent of the Swan Coastal Plain with an approximate height of 20 meters on the Australian Height Datum. The climate experienced in the area is Mediterranean, with dry, hot summers and cool, wet winters. According to the Bureau of Meteorology (2021); Garden Island WA, site number 009256, the annual mean rainfall for the area is estimated to be 598.0 millimetres per annum, with rain falling predominantly between June to August. The application area is located on relatively flat ground as shown in Appendix E.

Characteristic	Details
Soil description	The soil is mapped as Spearwood System S2a Phase (211Sp__S2a) Lower slopes (1-5%) of dune ridge with moderately deep to deep siliceous yellow-brown sands or pale sands with yellow-brown subsoils and minor limestone outcrop.
Land degradation risk	The mapped soil types have low risks for water erosion, waterlogging, flood, salinity, subsurface acidification and subsurface compaction. The mapped soil types have medium risks for phosphorus export risk and water repellence risk but noting the extent and purpose of clearing, land degradation risk remains low. The mapped soil types have high risk for wind erosion risk but noting the extent and purpose of clearing, land degradation risk remains low (DPIRD, 2019).
Waterbodies	Spatial data and aerial imagery indicate that no mapped watercourses or wetlands intersect the application area. A total of 43 geomorphic wetlands are found within the local area (10km buffer). The closest wetlands are Cooloongup Lake (Approximately 0.14 km west of the application area) and Walungup Lake (Approximately 0.37 km west of the application area).
Hydrogeography	The application area is mapped within the Stakehill Groundwater Area, proclaimed under the RIWI Act. No Public Drinking Water Source Areas intersect the application area.
Flora	No records of threatened or priority flora occur within the proposed clearing areas. According to available databases, 18 flora taxa of conservation significance have been recorded within the local area (10 km buffer). From those, a total of two flora taxa (listed as priority) are found on the same soil type than the area proposed to be cleared. The nearest records of threatened and priority flora are *Acacia* sp. Binningup (G. Cockerton et al. WB 37784) (P1; 2.99 km north-west) and *Sphaerolobium calcicola* (P3; 4.07 km west). Noting the vegetation condition and the small extent of clearing proposed, the vegetation within the application area is not likely to comprise suitable habitat for these species or other conservation significant flora recorded within the local area. The clearing proposed is not likely to impact the conservation status of conservation significant flora within the local area. Survey desktop analysis (Natural Area Holdings Pty Ltd, 2021) did not identify *Dodonaea hackettiana*. This species is perennial and would have been identifiable during the survey. *Stylidium longitubum* is also missing from the survey desktop analysis, however the proposed area to clear does not provide suitable habitat for this species. No threatened or priority flora were identified during the survey (Natural Area Holdings Pty Ltd, 2021).
Ecological communities	No records of conservation significant ecological communities occur over the application area. According to available databases, three conservation significant ecological communities known as Tuart (*Eucalyptus gomphocephala*) woodlands and forests of the Swan Coastal Community (Priority 3); Sedgelands in Holocene dune swales of the southern Swan Coastal Plain community (Critically Endangered) and Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region (Priority 3) have been recorded within the local area, situated approximately 0.04 km; 0.39 km and 1.29 km respectively from the application area.

Characteristic	Details
	No TECs or PECs were identified within the proposed clearing area during the survey (Natural Area Holdings Pty Ltd, 2021).
Fauna	No records of conservation significant fauna occur over the application area. According to available datasets, there are 54 fauna species of conservation significance have been recorded within the local area, comprising six mammal, two fish, three invertebrate, 36 bird and seven reptile taxa. Of these records, three fauna are associated with aquatic environments. This habitat type is absent from the application area. The nearest records of conservation significant fauna species are a *Isoodon fusciventer* (Southwestern brown bandicoot; Priority 4) and a *Calyptorhynchus latirostris* (white tailed black cockatoo; Endangered), located approximately 0.19 km and 0.67 km respectively. The vegetation within the application area is located within the known distribution range for all three black cockatoo species (Commonwealth of Australia, 2012) and within areas suitable for Carnaby's cockatoo and Red-tailed black cockatoo breeding and foraging. One artificial black cockatoos breeding site and 18 black cockatoos roost sites have been recorded within the local area. One tree *Eucalyptus gomphocephala* was identified during the vegetation survey within the proposed area to clear. The tree does not feature hollows (Natural Area Holdings Pty Ltd, 2021).

B.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*					
Swan Coastal Plain	1,501,221.93	579,813.47	38.62	222,916.97	17.98
Vegetation complex					
Cottesloe Complex-Central and South **	45,229.61	14,567.87	32.16	6,606.12	14.58
Local area					
10km radius	26,550.64	6,278.25	23.65	-	-

*Government of Western Australia (2019a)

**Government of Western Australia (2019b)

B.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)	Number of known records (total)	Are surveys adequate to identify? [Y, N, N/A]
Acacia sp. Binningup (G. Cockerton et al. WB 37784)	P1	N	N	Y	2.99 (North-west)	1	Y
Sphaerolobium calcicola	P3	N	Y	N	4.07 (West)	2	Y
Jacksonia sericea	P4	N	N	N	4.65 (South west)	2	Y
Dodonaea hackettiana	P4	Y	Y	N	6.35 (North-east)	42	Y
Drakaea elastica	Y	N	N	N	7.19 (East)	30	Y
Stylidium longitubum	4	N	N	N	7.27 (East)	14	Y

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

B.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]
Isoodon fusciventer	P4	N	Y	0.19	1095	N
Calyptorhynchus latirostris	EN	Y	Y	0.67	27780	Y
Calyptorhynchus banksii naso	VU	Y	Y	1.71	227	Y
Lerista lineata	P3	N	Y	2.58	19	N
Ctenotus gemmula (Swan Coastal Plain population)	P3	Y	Y	2.69	2	N
Phascogale tapoatafa wambenger	CD	N	Y	3.94	4	N
Notamacropus irma	P4	Y	Y	3.94	6	N
Idiosoma sigillatum	P3	Y	N	4.01	9	N

T: threatened, CR: critically endangered, EN: endangered, VU: vulnerable, P: priority, CD: Specially Protected - Conservation Dependent

B.5. Ecological community analysis table

Community 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]
Tuart (*Eucalyptus gomphocephala*) woodlands and forests of the Swan Coastal	P3	Y	Y	Y	0.04	132	Y
Sedgelands in Holocene dune swales of the southern Swan Coastal Plain (floristic community type 19 as originally described in in Gibson et al. (1994))	CR	N	N	N	0.39	64	Y
Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	P3	N	N	Y	1.29	304	Y

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

B.6. Land degradation risk table

Risk categories	***Land Unit 1***
Wind erosion	M1: 10-30% of the map unit has a high to extreme hazard
Water erosion	L2: 3-10% of the map unit has a very high to extreme hazard
Salinity	L2: 3-10% of the map unit has a moderate or high hazard or is presently saline
Subsurface Acidification	M2: 30-50% of the map unit has a high susceptibility
Flood risk	L1: <3% of the map unit has a moderate to high hazard
Water logging	L2: 3-10% of the map unit has a moderate to very high to risk
Phosphorus export risk	L2: 3-10% of the map unit has a high to extreme hazard

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: The area proposed to be cleared does not contain conservation significant flora, fauna or a unique assemblage of plants. The area proposed to be cleared does not contain an area of high biodiversity.	Not likely to be at variance	No
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 area proposed to be cleared does not contain foraging, roosting, or breeding habitat for conservation significant fauna. It is noted that one tree *Eucalyptus gomphocephala* without hollows will be impacted by the proposed works.	Not likely to be at variance	Yes Refer to Section *3.2.2, above.*
Principle (c): *"Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora."* Assessment: The area proposed to be cleared is unlikely to contain habitat for flora species listed under the BC Act.	Not likely to be at variance	No
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 contains 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 the mapped vegetation type and the native is consistent with the national objectives and targets for biodiversity conservation in Australia. The vegetation proposed to be cleared is not considered to be part of a significant ecological linkage in the local area. Whilst the local area retains less than the recommended 30 per cent threshold, noting the lack of biodiversity and size of the proposed clearing, it is not considered to be a significant remnant within an extensively cleared landscape.	Not likely to be at variance	No
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: The proposed clearing is located near conservation areas.	Not likely to be at variance	Yes *Refer to Section 3.2.1, above.*
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 an environment associated with a watercourse or wetland.	Not likely to be at variance	No

Assessment against the clearing principles	Variance level	Is further consideration required?
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 moderately susceptible to phosphorous and water repellence risk. Due to the small size of the proposed clearing footprint, total of 0.065 ha, and road work methodologies likely to be imposed, the proposed clearing is unlikely 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: Given no water courses, wetlands or Public Drinking Water Sources Areas are recorded within the application area, the proposed clearing is unlikely to impact surface or ground water quality.	Not likely to be at variance	No
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 size of the clearing and the mapped soils and topographic contours in the surrounding area do not indicate the proposed clearing is likely to contribute to increased incidence or intensity of flooding.	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.
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. Photographs of the vegetation within the application area

Figure 2: Photograph of the application area (City of Rockingham, 2021).

Figure 3: Photograph of the application area (City of Rockingham, 2021).

Figure 4: Examples of native flora species recorded during the flora and vegetation survey (Natural Area Holdings Pty Ltd, 2021)

Soursob (**Oxalis pes-caprae*)

Bridal Creeper (**Asparagus asparagoides*)

Plumbago (**Plumbago auriculata*)

Trachyandra (**Trachyandra divaricata*)

Perennial Veldt (**Ehrharta calycina*)

African Lovegrass (*Eragrostis curvula)

Figure 5: Examples of introduced flora species recorded during the flora and vegetation survey (Natural Area Holdings Pty Ltd, 2021)

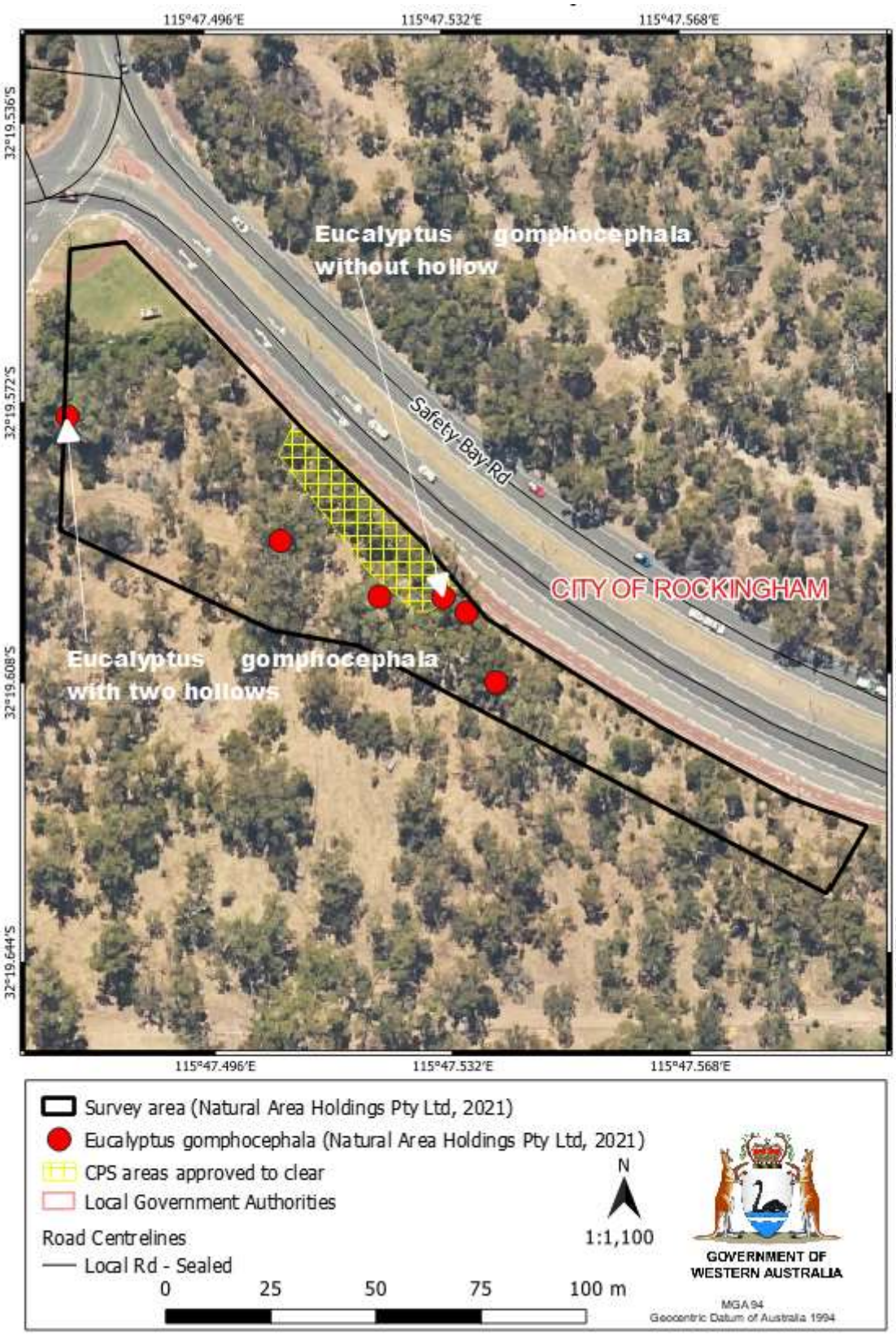

Figure 6: Location of *Eucalyptus gomphocephala* from the vegetation survey undertaken by Natural Area Holdings Pty Ltd (2021).

Appendix F. Sources of information

F.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
- Wheatbelt Wetlands Stage 1 (DBCA-021)

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)

F.2. References

Bureau of Meteorology (2021). *Climate and Weather Statistics – Garden Island ID 009256*, accessed November 2021 via: http://www.bom.gov.au/climate/averages/tables/cw_009256.shtml.

City of Rockingham (2021) *Supporting information for clearing permit application CPS 9398/1*, received 19 August 2021 (DWER Ref: DWERDT493688).

Department of Water and Environmental Regulation (DWER) (2021). *Procedure: Native vegetation clearing permits*. Joondalup. Available from: https://dwer.wa.gov.au/sites/default/files/Procedure_Native_vegetation_clearing_permits.pdf

Environmental Protection Authority (EPA) (2016). *Technical Guidance - Flora and Vegetation Surveys for Environmental Impact Assessment*. Available from: http://www.epa.wa.gov.au/sites/default/files/Policies_and_Guidance/EPA%20Technical%20Guidance%20-%20Flora%20and%20Vegetation%20survey_Dec13.pdf

Environmental Protection Authority (EPA) (2020). *Technical Guidance – Terrestrial Fauna Surveys.* Available from: https://www.epa.wa.gov.au/sites/default/files/Policies_and_Guidance/2020.09.17%20-%20EPA%20Technical%20Guidance%20-%20Vertebrate%20Fauna%20Surveys%20-%20Final.pdf

Gibson, N., Keighery, B., Keighery, G., Burbidge, A and Lyons, M. (1994) A floristic survey of the Southern Swan Coastal Plain. Unpublished report for the Australian Heritage Commission prepared by the Department of Conservation and Land Management and the Conservation Council of Western Australia (Inc.).

Government of Western Australia. (2019) *2018 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report). Current as of March 2019.* WA Department of Biodiversity, Conservation and Attractions. https://catalogue.data.wa.gov.au/dataset/dbca-statewide-vegetation-statistics

Heddle, E., Loneragan, O., and Havel, J. (1980). Vegetation Complexes of the Darling System Western Australia. In Atlas of Natural Resources - Darling System, Western Australia (pp. 37 - 72). Canberra, W.A: Department of Conservation and Environment, Western Australia.

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

Natural Area Holdings Pty Ltd (2021) *Black Spot Project - Safety Bay Road Flora and Vegetation Survey*, City of Rockingham