



CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

PERMIT DETAILS

Area Permit Number: CPS 10384/1
File Number: DWERVT13513
Duration of Permit: From 08 January 2024 to 08 January 2026

PERMIT HOLDER

City of Rockingham

LAND ON WHICH CLEARING IS TO BE DONE

Lot 8016 on Deposited Plan 48290, Shoalwater
Unnamed Road Reserve (PIN 11424401), Shoalwater

AUTHORISED ACTIVITY

The permit holder must not clear more than 0.014 hectares of *native vegetation* within the area cross-hatched yellow in Figure 1 of Schedule 1.

CONDITIONS

1. Period during which clearing is authorised

The permit holder must not clear any *native vegetation* after 08 January 2026.

2. 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.

3. 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.

4. Directional clearing

The permit holder must:

- (a) conduct *clearing* activities in a slow, progressive manner towards adjacent *native vegetation*; and
- (b) allow a reasonable time for fauna present within the area being cleared to move into adjacent *native vegetation* ahead of the *clearing* activity.

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	<ol 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 GDA2020, expressing the geographical coordinates in Eastings and Northings; (c) the date that the area was cleared; (d) the direction of clearing; (e) the size of the area cleared (in hectares); (f) actions taken to avoid, minimise, and reduce the impacts and extent of clearing in accordance with condition 2; and (g) actions taken to minimise the risk of the introduction and spread of <i>weeds</i> and <i>dieback</i> in accordance with condition 3.

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 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 <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.
fill	means material used to increase the ground level, or to fill a depression.
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.
dieback	means the effect of <i>Phytophthora</i> species on native vegetation
EP Act	<i>Environmental Protection Act 1986</i> (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.
weeds	means any plant – <ul style="list-style-type: none"> (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

A handwritten signature in black ink, appearing to be 'Mathew Gannaway', written over a horizontal line.

Mathew Gannaway
MANAGER
NATIVE VEGETATION REGULATION

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

15 December 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



Clearing Permit Decision Report

1 Application details and outcome

1.1. Permit application details

Permit number:	CPS 10384/1
Permit type:	Area permit
Applicant name:	City of Rockingham
Application received:	16 October 2023
Application area:	0.014 hectares of native vegetation
Purpose of clearing:	Construction of a shared path
Method of clearing:	Mechanical/Cutting
Property:	Lot 8016 on Deposited Plan 48290 Unnamed Road reserve (PIN 11424401)
Location (LGA area/s):	City of Rockingham
Localities (suburb/s):	Shoalwater

1.2. Description of clearing activities

The vegetation proposed to be cleared is 0.014 hectares of native vegetation contained within a single contiguous area at the eastern end of Richmond Avenue (see Figure 1, Section 1.5). The proposed clearing is to improve sightline of pedestrians and cyclists and to facilitate passive surveillance (City of Rockingham, 2023).

1.3. Decision on application

Decision:	Granted
Decision date:	15 December 2023
Decision area:	0.0014 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 flora and vegetation survey (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 Delegated Officer also took into consideration the purpose of the clearing is to improve community safety by improving sightline for pedestrians and cyclists.

The assessment identified that the proposed clearing will result in:

- potential impacts to conservation significant fauna if present during clearing activities,

- 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 and
- potential land degradation in the form of water erosion, flood, waterlogging and phosphorus export.

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 not likely to have long-term adverse impacts on land and water values and can be minimised and managed to unlikely lead to an unacceptable risk to environmental values.

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,
- undertake slow, progressive one directional clearing to allow terrestrial fauna to move into adjacent habitat 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 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)
- *Rights in Water and Irrigation Act 1914* (RIWI 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

Supporting information was submitted by the applicant, demonstrating that the shared path alignment was designed to avoid unnecessary clearing. However, to comply with guidelines for path design, some clearing is unavoidable (City of Rockingham, 2023).

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 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 land and water resources. 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. Land and water resources - Clearing Principles (f), (g) and (i)

Assessment

One conservation category wetland (CCW) is mapped in close proximity to the application area (buffer area approximately nine metres from the application area). CCW's support a high level of environmental values. These are the highest priority wetlands and the management objective is the preservation of wetland attributes and functions (DBCA, 2017). The management objectives should be to take all reasonable measures to retain the wetland's hydrological function (EPA, 2008). Noting the small amount of clearing and that the application area is separated from the CCW by a road, it is unlikely to impact on the fringing vegetation or hydrological function of the CCW. It is also not likely to impact on groundwater or surface water resources, therefore the proposed clearing is not considered to result in any long-term impacts and cause a significant residual impact on wetland values.

The mapped soils within the application area are highly susceptible to water erosion, flood, waterlogging and phosphorus export. They are described as:

- Vasse V4a phase- deep calcerous soils, black loams overlying brown to grey silty clay and muddy sands at depth,
- Quindalup South Qf2 phase- relict foredunes and gently undulating beach ridge plain with deep uniform calcerous sands.

Due to the small extent of the proposed clearing and that it is already surrounded by cleared paths and a road, it is unlikely that there will be any long-term adverse impacts from water erosion, flood and water logging. As the path will be constructed over the cleared native vegetation, it is not likely the clearing will have negative impacts on phosphorus export of the area.

Conclusion

Based on the above assessment, the Delegated Officer has determined that the proposed clearing is not likely to lead to appreciable land degradation in the form of water erosion, flood, water logging or phosphorus export.

As the application area is in close proximity to a CCW (Lake Richmond), there is a potential for the introduction and spread of weeds and dieback into the adjacent riparian vegetation. Potential impacts to this wetland as a result of the introduction and spread of weeds and dieback may be minimised by the implementation of a weed and dieback management condition.

Conditions

To address the above impacts, the following management measure will be required as a condition on the clearing permit:

- Weed and dieback management condition to minimise the risk of introduction and spread of weeds into adjacent wetland areas.

3.3. Relevant planning instruments and other matters

The City of Rockingham advised DWER that local government approvals are not required, and that the proposed clearing is consistent with the City's Local Planning Scheme (City of Rockingham, 2023).

The application area falls within the Rockingham Groundwater Area, as proclaimed under the RIWI Act. Noting the extent and vegetation type, the proposed clearing will not impact on groundwater resources.

Several Aboriginal sites of significance have been mapped within the vicinity of the application area. It is the permit holder's responsibility to comply with the *Aboriginal Heritage Act 1972* and ensure that no Aboriginal Sites of Significance are damaged through the clearing process.

End

Appendix A. Site characteristics

A.1. 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 B.

Characteristic	Details
Local context	<p>The area proposed to be cleared is a 0.014-hectare patch of native vegetation in the intensive land use zone of Western Australia. It is adjacent to Lake Richmond and native vegetation to the north west and dwellings to the south.</p> <p>Spatial data indicates the local area (10-kilometre radius from the centre of the area proposed to be cleared) retains approximately 39.89 per cent of the original native vegetation cover.</p>
Ecological linkage	<p>The application area does not intersect any formally mapped ecological linkages. Ecological linkage 77 is located approximately 0.2 kilometres north of the application area. Noting the extent of the vegetation being cleared, the proposed clearing is not considered likely to significantly impact this linkage.</p>
Conservation areas	<p>No conservation areas are mapped within the application area. The closest conservation area is Bushforever site 358 which is located nine metres north of the application area at Lake Richmond.</p>
Vegetation description	<p>Photographs supplied by the applicant and the findings of a vegetation survey (Natural Area, 2023) indicate the vegetation within the proposed clearing area consists of <i>Acacia cochlearis</i> and <i>Scaevola crassifolia</i> closed heath.</p> <p>Representative photos and the full survey descriptions are available in Appendix D.</p> <p>This is consistent with the mapped vegetation type:</p> <ul style="list-style-type: none"> Quindalup 55, which is described as coastal dune complex consisting mainly of two alliances - the strand and fore-dune alliance and the mobile and stable dune alliance. Local variations include the low closed forest of <i>Melaleuca lanceolata</i> (Rottnest Teatree) - <i>Callitris preissii</i> (Rottnest Island Pine), the closed scrub of <i>Acacia rostellifera</i> (Summer-scented Wattle) and the low closed <i>Agonis flexuosa</i> (Peppermint) forest of Geographe Bay (Shepherd et al, 2001). <p>The mapped vegetation type retains approximately 60.49 per cent of the original extent (Government of Western Australia, 2019).</p>
Vegetation condition	<p>Photographs supplied by the applicant and a vegetation survey (Natural Area, 2023) indicate the vegetation within the proposed clearing area is in Very Good (Keighery, 1994) – condition, as a result of the high coverage of native shrub, sedge, and herb species.</p> <p>The full Keighery (1994) condition rating scale is provided in Appendix C. Representative photos and the full survey descriptions are available in Appendix D.</p>
Climate and landform	<p>The climate in the area is Mediterranean with hot dry summers and cool wet winters. According to the Bureau of Meteorology (2023); Garden Island WA, site number 009256, the region experiences an average annual rainfall of 610 millimetres.</p>
Soil description	<p>The soils in the application area are mapped as:</p> <ul style="list-style-type: none"> Vasse V4a phase (211Va_V4a) described as deep calcerous soils, black loams overlying brown to grey silty clay and muddy sands at depth. Quindalup South Qf2 phase (211Qu_Qf2) described as relict foredunes and gently undulating beach ridge plain with deep uniform calcerous sands.

Characteristic	Details
Land degradation risk	The mapped soil types within the application area are mapped as having a high risk of water erosion, flood, waterlogging and phosphorus export (DPIRD, 2023).
Waterbodies	The desktop assessment and aerial imagery indicated that no wetlands or waterbodies transect the application area. The closest waterbody to the application area is CCW Lake Richmond which is located nine metres north of the application area.
Hydrogeography	The application area falls within the Rockingham Groundwater Area, as proclaimed under the RIWI Act.
Flora	<p>The desktop assessment identified that a total of seven priority flora species have been recorded in the local area (Western Australian Herbarium, 1998-). None of these existing records occur within the application area, with the closest record being an occurrence of <i>Dodonaea hackettiana</i> (P4) approximately 1.49 kilometres from the application area.</p> <p>With consideration for the site characteristics set out above, relevant datasets (see Appendix E) and the habitat preferences of the aforementioned species, and biological survey information (Natural Area, 2023), the application area is unlikely to provide significant habitat for conservation significant flora species. No conservation significant flora species were recorded during the survey (Natural Area, 2023).</p>
Ecological communities	<p>The desktop assessment identified that there are no conservation significant ecological communities within the application area. The closest mapped Threatened Ecological Community (TEC) is the Sedgeland in Holocene dune swales of the southern Swan Coastal Plain (floristic community type 19 as originally described in Gibson et al. 1994) which is located 13 metres north of the application area.</p> <p>No TEC's or Priority Ecological Communities have been recorded within the application area (Natural Area, 2023).</p>
Fauna	<p>The desktop assessment identified that a total of 46 conservation significant fauna species have been recorded in the local area, including 19 threatened fauna species, 11 priority fauna species, one other specially protected fauna species, and 15 migratory fauna species (DBCAs, 2007-). None of these existing records occur within the application area, with the closest record being an occurrence of Quenda (<i>Isodon fusciventer</i>), approximately 0.2 kilometres from the application area.</p> <p>With consideration for the site characteristics set out above, relevant datasets (see Appendix E) and the habitat preferences of the aforementioned species, and biological survey information (Natural Area, 2023), the application area is unlikely to provide significant habitat for conservation significant fauna species.</p> <p>Noting records of conservation significant fauna are recorded nearby, fauna may traverse the application area as they move through the landscape. Undertaking slow, directional clearing will mitigate this risk.</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*					
Swan Coastal Plain	1501221.93	579813.47	38.62	222916.97	14.85
Vegetation complex					
Quindalup 55*	54573.87	33011.64	60.49	5994.64	10.98
Local area					
10km radius	10879.91	4340.17	39.89	-	-

*Government of Western Australia (2019a)

A.3. 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]
Sedgeland in Holocene dune swales of the southern Swan Coastal Plain (floristic community type 19 as originally described in Gibson et al. 1994)	CR	Y	Y	Y	0.013	35	Y
Woodlands over Sedgeland in Holocene dune swales of the southern Swan Coastal Plain (floristic community type 19 as originally described in Gibson et al. 1994)	CR	N	N	N	0.2	19	Y
Stromatolite like microbialite community of coastal freshwater lakes (Lake Richmond)	CR	N	N	N	0.078	1	Y

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

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> The area proposed to be cleared does not contain locally or regionally significant flora, fauna, habitats or assemblages of plants. No conservation significant flora, fauna or communities were recorded during the survey (Natural Area, 2023).</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> The area proposed to be cleared does not contain significant habitat for conservation significant fauna, however fauna may utilise the application area to traverse through the landscape. Slow directional clearing will minimise impacts to individuals present at the time of clearing.</p>	Not likely to be at variance	No
<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> The area proposed to be cleared is unlikely to contain habitat for threatened flora species. No threatened flora were recorded during the survey (Natural Area, 2023).</p>	Not likely to be at variance	No
<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> The area proposed to be cleared is unlikely to be representative of any TEC listed under the BC Act or EPBC Act (Natural Area, 2023).</p>	Not likely to be 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> The extent of the mapped vegetation type and vegetation extent 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 part of a significant ecological linkage in the local area.</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> Whilst the application area is located adjacent to a conservation area, weed and dieback management actions will minimise the risk or impacts occurring to the adjacent vegetation. The proposed clearing is not likely to have an impact on the environmental values of nearby conservation areas.</p>	Not likely to be at variance	No
Environmental value: land and water resources		
<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> CCW Lake Richmond is recorded within 50 metres of the application area. Given the extent and road separation from the application</p>	Not likely to be at variance	Yes <i>Refer to Section 3.2.1, above.</i>

Assessment against the clearing principles	Variance level	Is further consideration required?
area, the proposed clearing is not located within an environment associated with a watercourse or wetland.		
<p><u>Principle (g):</u> “Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.”</p> <p><u>Assessment:</u> The mapped soils are highly susceptible to water erosion, flooding, waterlogging and phosphorus export. Noting the vegetation type and extent of the application area, the proposed clearing is not likely to have an appreciable impact on land degradation.</p>	Not likely to be at variance	Yes <i>Refer to Section 3.2.1, above.</i>
<p><u>Principle (i):</u> “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.”</p> <p><u>Assessment:</u> CCW Lake Richmond is recorded within 50 metres of the application area, however given the size and road separation, the proposed clearing is unlikely to impact surface or ground water quality.</p>	Not likely to be at variance	Yes <i>Refer to Section 3.2.1, above.</i>
<p><u>Principle (j):</u> “Native vegetation should not be cleared if the clearing of the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.”</p> <p><u>Assessment:</u> The mapped soils and topographic contours in the surrounding area do indicate the proposed clearing is likely to contribute to increased incidence or intensity of flooding.</p> <p>Given Lake Richmond is recorded within 50 metres of the application area, the proposed clearing may contribute to waterlogging, however noting the extent of the proposed clearing it is not likely to have an appreciable impact on flooding.</p>	Not 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.

Condition	Description
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. Biological survey information excerpts and photographs of the vegetation



Figure 2. Closed heath dominated by *Acacia cochlearis* and *Scaevola crassifolia* over native sedges and mixed native and introduced herbs (Natural Area, 2023).



Figure 3. Proposed vegetation to be cleared (City of Rockingham, 2023)



Figure 4. Proposed vegetation to be cleared (City of Rockingham, 2023)



Figure 5. Proposed vegetation to be cleared (City of Rockingham, 2023)



Figure 6. Proposed vegetation to be cleared (City of Rockingham, 2023)



Figure 7. Proposed vegetation to be cleared (City of Rockingham, 2023)



Figure 8. Proposed vegetation to be cleared (City of Rockingham, 2023)



Figure 9. Richmond Avenue vegetation types (Natural Area, 2023)



Figure 10. Richmond Avenue vegetation condition (Natural Area, 2023)

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)
- 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)
- 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

City of Rockingham (2023) *Clearing permit application and supporting information CPS 10384/1*, received 16 October 2023 (DWER Ref: DWERT13513).

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

Department of Biodiversity, Conservation and Attractions (DBCA) (2017). *A methodology for the evaluation of wetlands on the Swan Coastal Plain*, draft prepared by the Wetlands Section of the Department of

Biodiversity, Conservation and Attractions and the Urban Water Branch of the Department of Water and Environmental Regulation, Perth. Available from: <https://www.dbca.wa.gov.au/media/2174/download>.

Department of Environment Regulation (DER) (2013). *A guide to the assessment of applications to clear native vegetation*. Perth. Available from: https://www.der.wa.gov.au/images/documents/your-environment/native-vegetation/Guidelines/Guide2_assessment_native_veg.pdf.

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