GOVERNMENT OF
WESTERN AUSTRALIA

CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

Purpose Permit number:	CPS 8217/1
Permit Holder:	City of Rockingham
Duration of Permit:	3 April 2019 – 3 April 2024

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

PART I –CLEARING AUTHORISED

1. **Purpose for which clearing may be done**
   Clearing for the purpose of road construction.

2. **Land on which clearing is to be done**
   Port Kennedy Drive Road reserve (PIN 1046772), Port Kennedy
   Port Kennedy Drive Road reserve (PIN 1133868), Port Kennedy

3. **Area of Clearing**
   The Permit Holder must not clear more than 3.31 hectares of native vegetation within the area hatched yellow on attached Plan 8217/1.

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

5. **Clearing authorised**
   This Permit authorises the Permit Holder to clear native vegetation for the activities described in condition 1 of this Permit to the extent that the Permit Holder has the power to carry out works involving clearing for those activities under the *Local Government Act 1995* or any other written law.

PART II –MANAGEMENT CONDITIONS

6. **Avoid, minimise and reduce the impacts and extent of clearing**
   In determining the amount of native vegetation to be cleared authorised under this Permit, the Permit Holder must have regard to the following principles, set out in order of preference:
   (a) avoid the clearing of native vegetation;
   (b) minimise the amount of native vegetation to be cleared; and
   (c) reduce the impact of clearing on any environmental value.

7. Dieback and weed control

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

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

PART III - RECORD KEEPING AND REPORTING

8. Records to be kept

The Permit Holder must maintain the following records for activities done pursuant to this Permit, in relation to the clearing of native vegetation authorised under this permit:

(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 or decimal degrees;
(b) the date that the area was cleared;
(c) the size of the area cleared (in hectares);
(d) actions taken to avoid, minimise and reduce the impacts and the extent of clearing in accordance with condition 6 of this Permit; and
(e) actions taken to minimise the introduction and spread of *weeds* and *dieback* in accordance with condition 7 of this Permit.

9. Reporting

The Permit Holder must provide to the *CEO* the records required under Condition 8 of this Permit, when requested by the *CEO*.

DEFINITIONS

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

CEO means the Chief Executive Officer of the Department responsible for the administration of the clearing provisions under the *Environmental Protection Act 1986;*
dieback means the effect of *Phytophthora* species on native vegetation;
fill means material used to increase the ground level, or fill a hollow;
mulch means the use of organic matter, wood chips or rocks to slow the movement of water across the soil surface and to reduce evaporation;
weed/s means any plant -

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

Samara Rogers
SENIOR MANAGER
NATIVE VEGETATION REGULATION

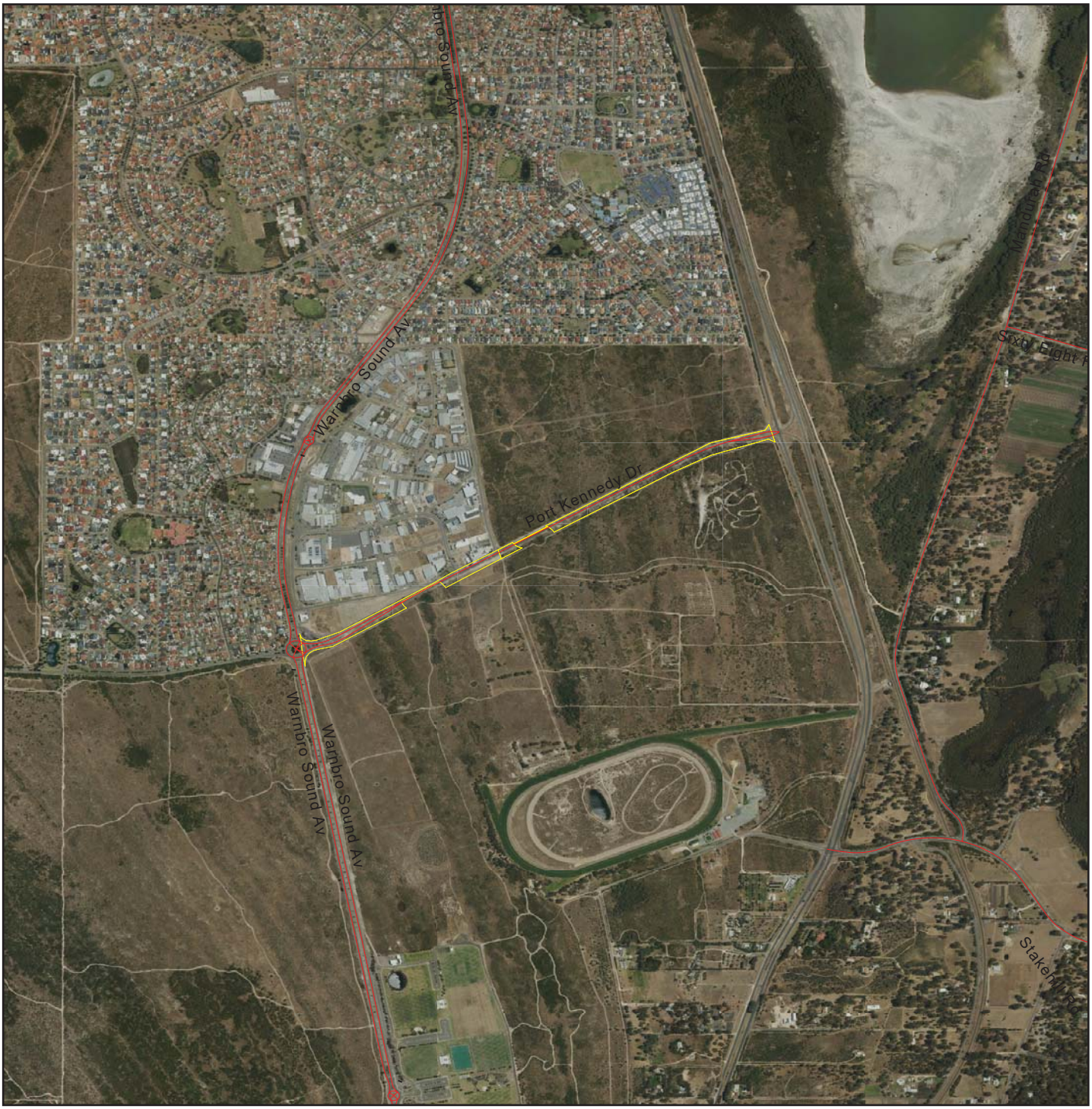
Officer delegated under Section 20
of the Environmental Protection Act 1986

11 March 2019

Plan 8217/1

32.355764°S 32.355764°S

115.744166°E 115.786825°E



115.744166°E 115.786825°E

32.386933°S 32.386933°S

Legend

- Clearing Instruments Conditions
- Imagery
- Clearing Instruments Activities

N

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1:21,266

(Approximate when reproduced at A4)

GDA 94 (Lat/Long)

Geocentric Datum of Australia 1994

Samara Rogers

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Officer with delegated authority under Section 20 of the Environmental Protection Act 1986

GOVERNMENT OF WESTERN AUSTRALIA

Government of Western Australia
Department of Water and Environmental Regulation

Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 8217/1
Permit type: Purpose Permit

1.2. Applicant details

Applicant's name: City of Rockingham
Application received date: 9 October 2018

1.3. Property details

Property: ROAD RESERVE - 1133868, PORT KENNEDY
ROAD RESERVE - 1046772, PORT KENNEDY
Local Government Authority: ROCKINGHAM, CITY OF
Localities: PORT KENNEDY

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	Purpose category:
3.31		Mechanical Removal	Road construction or upgrades

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 11 March 2019
Reasons for Decision: The clearing permit application has been assessed against the clearing principles, planning instruments and other matters in accordance with section 51O of the *Environmental Protection Act 1986* (EP Act). It has been concluded that the proposed clearing may be at variance to principle (h), and is not likely to be at variance to the remaining Principles.

The initial assessment of the proposed clearing determined that vegetation within the application area comprised of a threatened ecological community (TEC), and the proposed clearing was likely to significantly impact this TEC. The applicant has minimised the impact on the TEC by removing vegetation that comprises the TEC and vegetation within a 50 metre buffer of the TEC, from the application area.

Through assessment it has been determined that the proposed clearing may impact on an adjoining conservation reserve. Impacts to the reserve can be adequately minimised by imposing weed and dieback management measures.

In determining to grant a clearing permit subject to avoid and minimise and weed and dieback conditions, the Delegated Officer determined that the proposed clearing is not likely to lead to an unacceptable risk to the environment.

2. Site Information

Clearing Description The application is to clear 3.31 hectares of native vegetation within Port Kennedy Drive road reserve (PINs 1046772 and 1133868) Port Kennedy, for the purpose of road construction (figure 1).

Vegetation Description The vegetation within the application area is mapped within the Swan Coastal Plain vegetation complex - Quindalup Complex - described as; coastal dune complex consisting mainly of two alliances - the strand and fore-dune alliance and the mobile and stable dune alliance (Heddle et al., 1980).

A flora survey of the application area undertaken by Emerge Associates (2018a) recorded three vegetation associations within the survey area:

- ArMs (3.5 hectares) - Shrubland to closed shrubland of *Acacia rostellifera* (sometimes with codominant *Acacia saligna* and *Acacia cochlearis*) over open low shrubland *Melaleuca systena* and *Acacia lasiocarpa* over open forbland *Acanthocarpus preissii*, *Lomandra maritima*, *Conostylis pauciflora* subsp. *pauciflora*, *Senecio pinnatifolius* var. *pinnatifolius* and *Trachyandra divaricata* and grassland to closed grassland *Austrostipa flavescens*, **Bromus diandrus*, *Lolium rigidum*, *Ehrharta* spp. and *Eragrostis curvula*.
- BjFnLg (0.11 hectares) - Low open woodland of *Melaleuca rhaphiophylla* and *Eucalyptus decipiens* (or overstorey layer absent) over sparse forbland of **Dittrichia graveolens*, closed sedgeland of *Baumea juncea*, *Ficinia nodosa* and *Lepidosperma gladiatum* and open vineland *Clematis linearifolia* over open grassland *Austrostipa flavescens* and **Bromus diandrus*.

- JfAsBd (0.19 hectares) - Shrubland of *Jacksonia furcellata*, **Leptospermum laevigatum* and *Acacia saligna* over forbland of *Opercularia vaginata*, *Senecio pinnatifolius* var. *pinnatifolius*, **Euphorbia terracina*, **Trachyandra divaricata* and **Pelargonium capitatum* and grassland of **Bromus diandrus*, **Eragrostis curvula* and **Lagurus ovatus*.

Vegetation Condition

Vegetation condition has been determined using the vegetation condition scale developed by Keighery (1994). All references to vegetation condition throughout this assessment therefore, reference this scale.

The flora survey of the application area undertaken by Emerge Associates (2018a) determined the application area to be in a very good condition to completely degraded condition, described as:

- Very Good - Vegetation structure altered; obvious signs of disturbance. For example, disturbance to vegetation structure caused by repeated fires; the presence of some more aggressive weeds; dieback; logging; 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 frequent fires; the presence of some very aggressive weeds at high density; partial clearing; dieback; 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; grazing.
- Completely degraded (60 per cent of application area) - 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.

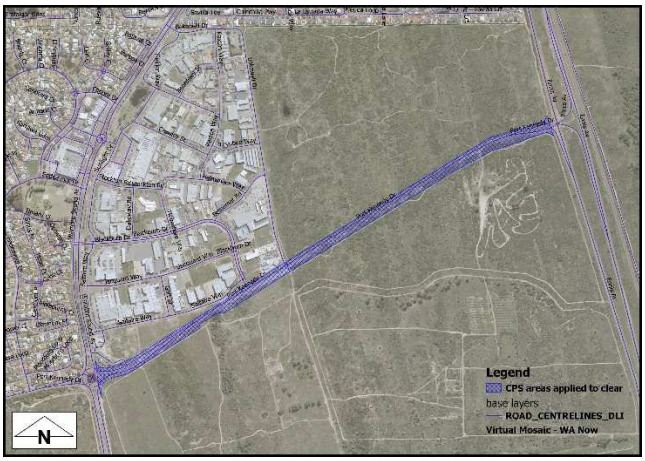

Fig 1: Vegetation under application.

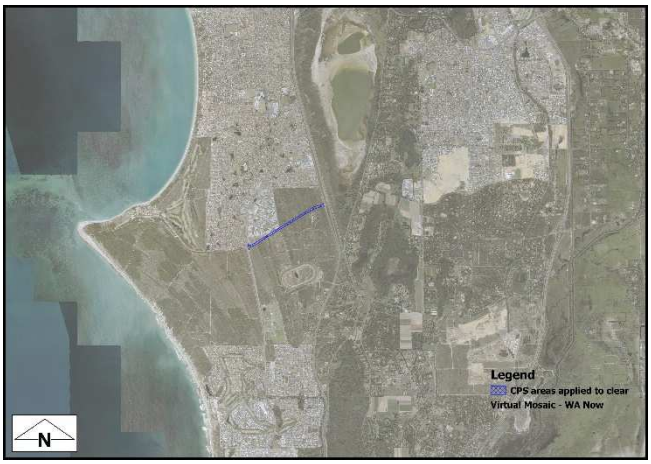

Figure 2: Position of the application area within the local area.

3. Minimisation and mitigation measures

The applicant has stated that vegetation will not be cleared unless required for the duplication of the road (Emerge Associates, 2018).

The initial assessment of the proposed clearing determined that vegetation within the application area comprised of a threatened ecological community (TEC), and the proposed clearing was likely to significantly impact this TEC. The applicant has minimised the impact on the TEC by removing vegetation that comprises the TEC and vegetation within a 50 metre buffer of the TEC, from the application area.

4. Assessment of application against clearing principles

(a) Native vegetation should not be cleared if it comprises a high level of biological diversity.

Proposed clearing is not likely to be at variance to this Principle

A flora survey undertaken by Emerge in Spring 20017 (2018a) recorded vegetation types ArMs, BjFnLg and JfAsBd as described in section 2 of this report. Statistical analysis undertaken by Emerge (2018a) determined that the identified vegetation types correlate to the following Swan Coastal Plain Floristic Community Types:

- ArMs was determined to be consistent with FCT 29b 'Acacia shrublands on taller dunes';
- BjFnLg was determined to represent FCT 19 (a and b) 'Sedgelands in Holocene dune swales'; and
- JfAsBd was not found to align with a FCT due to its degraded condition and dominance of introduced species.

FCT 29b is listed as a Priority Ecological Community (PEC) by DBCA and FCT 19 is listed as a critically endangered Threatened Ecological Community (TEC) endorsed by the Western Australian Minister for Environment.

The application area contains 0.11 hectares of vegetation consistent with the *Sedgelands in Holocene dune swales* TEC, across two patches. The Department of Biodiversity Conservation and Attractions (DBCA) Species and Communities Branch has advised that although the proposed clearing is "relatively limited in extent in relation to the size of the remainder of the occurrence, the clearing and road construction will result in direct clearing of part of the occurrence that is in very good condition, in a patch that is currently quite large and relatively intact" (DBCA, 2018). DBCA also advised that in addition to direct clearing, the proposed clearing is also likely cause secondary impacts through increased weed penetration and altered hydrology in adjacent areas of the TEC. The proposed clearing of 0.11 hectares of the TEC is likely to be significant. The applicant has minimised the impact on the TEC by removing vegetation that comprises the TEC and vegetation within a 50 metre buffer of the TEC, from the application area.

In order to determine the significance of the *Acacia shrublands on taller dunes* PEC occurrence within the local area, a flora survey of adjoining vegetation was undertaken (Emerge Associates, 2018b). A majority of the adjoining vegetation was found to be consistent with the PEC (Emerge Associates, 2018b). DBCA has advised that the PEC is reasonably common in the area, and that the clearing of the application area will not have a significant impact on FCT 29b (DBCA, 2018). Given this, the proposed clearing is not likely to impact on *Acacia shrublands on taller dunes* PEC.

The flora survey undertaken by Emerge Associates (2018a) did not record any flora species listed threatened under the *Biodiversity Conservation Act*, within the *Wildlife Conservation (Rare Flora) Notice 2018.* As the survey was timed to coincide with the flowering times of species recorded from the local area, threatened flora are not likely to be impacted by the proposed clearing.

The flora survey undertaken by Emerge Associates (2018a) recorded 146 individuals of a Priority 4 flora species within the application area. In order to determine the significance of the individuals within the local area, a flora survey of adjoining vegetation was undertaken (Emerge Associates, 2018b). A further 1,699 idividuas were recorded within adjoining vegetation with an estimated population of 16,756 within the larger remnant. DBCA (2018) has advised that given the results of this survey and as parts of this adjoining vegetation are within conservation estate, proportional impacts are unlikely to be significant to the conservation of this taxon at either the local or regional scale. DBCA requested that that the consultant be advised to lodge a specimen with the WA Herbarium if this has not already been done.

No further conservation significant flora were recorded within the application area (Emerge Associates 2018a; 2018b).

As assessed within Principle (b), the vegetation within the application area is not likely to comprise significant habitat for conservation significant fauna recorded from the local area and the proposed clearing is not likely to impact on local fauna populations. A black cockatoo habitat assessment did not record potential habitat within the application area and a fauna survey did not record significant habitat for conservation significant fauna within the application area (Emerge Associates, 2017).

As assessed within Principle (e), the local area surrounding the application area retains 30.5 per cent pre-european extent of native vegetation. The vegetation within the application area forms a thin strip of native vegetation running alongside an existing transport corridor, predominantly in a degraded condition. Significant native vegetation occurs both north and south of this corridor. Weed and Dieback conditions will mitigate any impacts to adjacent remnant natvie vegetation.

Noting the vegetation no longer comprises of a TEC and given the vegetation within the adjoining conservation area is in a better condition and comprises the same environmental values, the vegetation within the application area is not likely to comprise of a high level of biological diversity. Therefore, the proposed clearing is not likely to be at variance to this 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 indigenous to Western Australia.

Proposed clearing is not likely to be at variance to this Principle

A fauna assessment of the application area undertaken by Emerge Associates (2017), including a level 1 fauna survey and Black Cockatoo habitat assessment determined that:

- Fauna habitat values with the application area are low given the observed disturbance and proximity to a transport corridor;
- Only three native fauna species were observed within the survey site;
- The site contains no existing or potential black cockatoo habitat trees;
- No vegetation regarded as foraging habitat for black cockatoos was observed;
- Given the extent of adjoining habitat along the length of the application area, the vegetation within the application area is not likely to be significant to fauna within the local area.

Five terrestrial fauna species, not associated with wetland environments and listed as rare or likely to become extinct under the BC Act within the *Wildlife Conservation (Specially Protected Fauna) Notice 2018* have been recorded within the local area (DBCA, 2007-):

- Baudin's cockatoo (*Calyptorhynchus baudinii*);
- forest red-tailed black cockatoo (*Calyptorhynchus banksii naso*);
- Carnaby's cockatoo (*Calyptorhynchus latirostris*);
- woylie (*Bettongia penicillata* subsp*. ogilbyi);* and
- chuditch (Dasyurus geoffroii).

Five terrestrial fauna species, not associated with wetland environments and listed as Priority by the Department of Biodiversity Conservation and Attractions (DBCA) have been recorded within the local area (DBCA, 2007-):

- Perth slider (*Lerista lineata);*
- black striped snake *(Neelaps calonotos);*
- quenda *(Isoodon obesulus);*
- *Swan Coastal Plain shield-backed trapdoor spider (Idiosoma sigillatum);* and
- graceful sunmoth (*Synemon gratiosa).*

As the record for the woylie is historical, with the species range contracting since recorded within the local area, the proposed clearing is not likely to impact on this species. Chuditch occur within the South West of Western Australia, predominantly within open or closed forests and require large fallen logs in which to form den sites. Given the lack of habitat for this species within the application area and as the proposed clearing will not impact on the movement of fauna through the landscape, the vegetation within the application area is not likely to form significant habitat for this species.

Given the vegetation recorded within the application area and results of the Black cockatoo habitat assessment (Emerge Associated, 2017), habitat for Baudin's, Carnaby's and forest red-tailed black cockatoo is not likely to be present within the application area and these species are not likely to be impacted by the proposed clearing.

The vegetation within the application area forms a thin strip running alongside an existing transport corridor, predominantly in a degraded condition. Significant native vegetation occurs both north and south of this corridor that would be used preferentially by any fauna within the local area. Given this, the occurrence of any Priority listed fauna would be incidental and the vegetation within the application area is not likely to form significant habitat for these species.

Given the above, the proposed clearing is not likely to be at variance to this Principle.

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

Proposed clearing is not likely to be at variance to this Principle

The flora survey undertaken by Emerge (2018a) did not record any threatened flora within the application area. The survey was timed to coincide with the flowering times of threatened flora recorded within the local area.

Given the above, the proposed clearing is not likely to be at variance to this clearing 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.

Proposed clearing is not likely to be at variance to this Principle

The flora survey undertaken by Emerge (2018a) recorded vegetation types ArMs, BjFnLg and JfAsBd as described in section 2 of this report. Statistical analysis undertaken by Emerge (2018a) determined that the identified vegetation types correlate to the following Swan Coastal Plain Floristic Community Types:

- ArMs was determined to be consistent with FCT 29b 'Acacia shrublands on taller dunes';
- BjFnLg was determined to represent FCT 19 (a and b) 'Sedgelands in Holocene dune swales'; and
- JfAsBd was not found to align with a FCT due to its degraded condition and dominance of introduced species.

FCT 19 is a critically endangered TEC endorsed by the Western Australian Minister for Environment and listed under the *Environment Protection and Biodiversity Conservation Act 1999 (EPBC)*. The application area contains 0.11 hectares of vegetation consistent with this TEC, across two patches.

A majority of the vegetation within the application area occurs adjacent to land managed by DBCA. The mapped occurrences extend into the adjoining vegetation and further occurrences are mapped within adjoining remnant native vegetation.

As discussed under Principle (a), DBCA advised that although the proposed clearing is relatively limited in extent in relation to the size of the remainder of the occurrence, the clearing and road construction will result in direct clearing of part of the occurrence that is in very good condition, in a patch that is currently quite large and relatively intact. In addition to direct clearing, the proposal also is likely to be associated with secondary impacts including increased weed penetration and altered hydrology in adjacent areas of the TEC (DBCA, 2018).

Given the restricted distribution of the *Sedgelands in Holocene dune swales* TEC, the proposed clearing of 0.11 hectares of the TEC is likely to be significant.

Given the above, the proposed clearing is not likely to be at variance to this 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.

Proposed clearing is not likely to be at variance to this Principle

The national objectives and targets for biodiversity conservation in Australia has a target to prevent clearance of ecological communities with an extent below 30 per cent of that present pre-1750, below which species loss appears to accelerate exponentially at an ecosystem level (Commonwealth of Australia, 2001). In the Perth and Bunbury Metropolitan regions, the Environmental Protection Authority (EPA) has a modified objective to retain at least 10 per cent of the pre-clearing extent of vegetation complexes for defined constrained areas (intensely developed) (EPA, 2015; EPA, 2003).

The mapped Quindalup complex retains 60.4 per cent native vegetation. The local area retains 30.5 per cent native vegetation. As the mapped vegetation type and local area occur above the 10 per cent threshold, the local area is not considered an area that has been extensively cleared.

The vegetation within the application area occurs along an existing transport corridor, adjoining land managed for conservation. Noting the vegetation within the application area comprises priority flora, a PEC, given the vegetation within the adjoining conservation area is in a better condition and comprises the same environmental values, the application area is not considered a significant remnant within the local area.

Given the above, the proposed clearing is not likely to be at variance to this Principle.

Table 1: Vegetation remaining statistics.

	Pre-European (ha)	Current Extent (ha)	Remaining (%)	Extent in Parks and Wildlife Managed Lands (%)
IBRA Bioregion*				
Swan Coastal Plain	1,501,221.93	578,997.37	38.57	38.7
South West Vegetation Association**				
Quindalup Complex	54,573.9	32,982.9	60.4	11.0
Local area				
10 kilometre radius	23,554.1	7,181.2	30.5	-

(f) Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.

Proposed clearing is at variance to this Principle

Two damp lands and one sumpland are mapped over the application area corresponding to the position of the TEC vegetation. The flora survey of the application area mapped the dampland vegetation as BjFnLg which is considered to represent the *Sedgelands in Holocene dune swales* TEC. Species defined within this vegetation association are commonly associated with wetland environments.

The first mapped dampland is centred on the road, it has therefore been given the classification of 'no longer a wetland' and is adjacent to the TEC occurrence. The second dampland has been classified as 'multiple use' along the transport corridor and 'conservation category' further from the disturbance of the road. The sumpland is mapped at the western end of the application area and is also associated with an occurrence of TEC in the adjacent remnant vegetation.

The applicant has minimised the impact on vegetation associated with a wetland by removing vegetation that comprises the TEC and vegetation within a 50 metre buffer of the TEC, from the application area.

Given vegetation within the application is no longer growing in association with a wetland, the proposed clearing is not likely to be at variance to this Principle.

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

Proposed clearing is not likely to be at variance to this Principle

The vegetation within the application area has been mapped within Quindalup South soil subsystems, described as (DPIRD, 2018):

- *Quindalup South Qf2 Phase* subsystem is described as relict foredunes and gently undulating beach ridge plain with deep uniform calcareous sands.
- Quindalup South Qf2a Phase subsystem is described as more prominent relict foredune ridges which occur within unit Qf2, with deep uniform calcareous sands.
- Quindalup South wet, swamp Phase subsystem is described as swamp.

As identified within Table 2 below, the risk of wind erosion, water erosion, salinity and flooding within the mapped soil subsystems is low to moderate. Given this, and the alignment of the application area along an established road, the proposed clearing is not likely to cause appreciable land degradation through these categories. The risk of water logging and phosphorus export within the Quindalup wet phase has been mapped as high. Given the small areas mapped within this subsystem and as the cleared areas will be maintained as a road, the proposed clearing is not likely to cause appreciable land degradation through water logging or phosphorus export.

Given the above, the proposed clearing is not likely to be at variance to this Principle.

Table 2: Land degradation risk categories (DPIRD, 2018).

Risk categories	Qf2	Qf2a	Q wet
Wind erosion	30-50% of map unit has a high to extreme wind erosion risk	30-50% of map unit has a high to extreme wind erosion risk	<3% of map unit has a high to extreme wind erosion risk
Water erosion	<3% of map unit has a moderate to very high waterlogging risk	30-50% of map unit has a high to extreme water erosion risk	<3% of map unit has a moderate to very high waterlogging risk

Salinity	30-50% of map unit has a moderate to high salinity risk or is presently saline	30-50% of map unit has a moderate to high salinity risk or is presently saline	30-50% of map unit has a moderate to high salinity risk or is presently saline
Flood risk	<3% of the map unit has a moderate to high flood risk	<3% of the map unit has a moderate to high flood risk	<3% of the map unit has a moderate to high flood risk
Water logging	<3% of map unit has a moderate to very high waterlogging risk	<3% of map unit has a moderate to very high waterlogging risk	>70% of map unit has a moderate to very high waterlogging risk
Phosphorus export risk	<3% of map unit has a high to extreme phosphorus export risk	30-50% of map unit has a high to extreme phosphorus export risk	>70% of map unit has a high to extreme phosphorus export risk

(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.

Proposed clearing may be at variance to this Principle

A DBCA reserve occurs along the southern boundary of the application area. This reserve, together with adjoining vegetation joins the Port Kennedy Scientific Park to the West with native vegetation to the East.

Noting the significant amount of native vegetation to the south and north of the application area, and the proposed clearing occurs along an existing transport corridor, the proposed clearing is not likely to impact on the movement of fauna between conservation reserves within the local area.

The proposed clearing has the potential to impact the adjoining reserve through an increase in edge effects such as weed introduction and increased unauthorised access. Weed, dieback and clearing management conditions are likely to limit this impact.

Given the above, the proposed clearing may be at variance to this 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.

Proposed clearing is not likely to be at variance to this Principle

As assessed within Principle (f), two minor damp lands and one sumpland are mapped within the application area. No further watercourses or wetlands occur within the application area. Given the small size of these wetlands and as they occur on an existing road, the proposed clearing is not likely to deteriorate the quality of surface water.

As assessed within Principle (g), the proposed clearing is not likely to increase the risk of salinity or eutrophication. Given this, the proposed clearing is not likely to impact on the quality of underground water.

Given the above, the proposed clearing is not likely to be at variance to this Principle.

(j) Native vegetation should not be cleared if clearing the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.

Proposed clearing is not likely to be at variance to this Principle

As assessed within Principle (g), the mapped risk of flooding within the soil subsystems is low. The proposed clearing is not of a size as to impact on the incidence or intensity of flooding.

Given the above, the proposed clearing is not likely to be at variance to this Principle.

Planning instruments and other relevant matters.

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

The clearing permit application was advertised on the DWER website on 1 November 2018 with a 21 day submission period. One submission has been received in relation to the proposed clearing raising concerns on impacts to TEC vegetation, wetland vegetation and the potential for fauna deaths. The concerns raised have been addressed in the assessment against clearing Principles (a), (b), (d) and (f).

The submitter's recommendation regarding referral to the EPA is acknowledged, however DWER considers that the proposed clearing can be assessed under Part V of the EP Act.

The submitter also recommended that the wetland in the adjacent Water Authority site and the unmade road reserve of 40 road could be revegetated as a potential offset site. In addition, fauna proof fencing (cyclone mesh) should be used to prevent fauna kills (Submission, 2018)

5. Applicant's Submissions

On 15 February 2019 the applicant was sent a letter outlining the potential environmental impacts of the proposed clearing on the TEC 'Sedgelands in Holocene dune swales'.

Advice on how the applicant intends to avoid and minimise the potential impact was requested. If further minimisation and avoidance is not possible, the applicant was advised that an offset to counterbalance the residual significant impacts would be required.

DWER met with City of Rockingham representatives on 27 February 2019 and 5 March 2019, to discuss the potential impacts of the proposed clearing on the TEC. During this meeting it was determined that it was most approporiate to remove the TEC vegetation and vegetation within a 50 metre buffer of the TEC, from the application area, to mimimise and mitigate the impacts of the propsoed clearing

The City of Rockingham intend to reapply for the vegetation comprising the TEC and the buffer once a suitable and appropriate environmental offset can be located. The City of Rockingham is liaising with the Department of Biodiversity, Conservation and\ Attractions to identify a suitable site, prior to reapplying.

6. References

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GIS Database List
- SAC Bio datasets (February 2019)
- Hydrography, linear
- Aboriginal Sites of Significance
- RIWI Areas
- Hydrography, linear
- Groundwater Salinity
- Pre-European vegetation
- DPaW Estate
- Soils, statewide
- Salinity Risk