



CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

Purpose Permit number:	CPS 8193/1
Permit Holder:	City of Busselton
Duration of Permit:	From 28 July 2019 to 28 July 2024

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

1. Purpose for which clearing may be done

Clearing for the purpose of constructing the duplication of Causeway Road, Busselton.

2. Land on which clearing is to be done

Lot 73 on Deposited Plan 49894, Busselton
Lot 435 on Deposited Plan 192017, Busselton
Lot 42 on Deposited Plan 222224, Busselton
Lot 41 on Deposited Plan 222226, Busselton
Lot 40 on Deposited Plan 222226, Busselton
Lot 39 on Deposited Plan 222226, Busselton
Lot 38 on Deposited Plan 222226, Busselton
Lot 380 on Deposited Plan 222226, Busselton
Lot 37 on Deposited Plan 222226, Busselton
Lot 230 on Deposited Plan 222226, Busselton
Lot 229 on Deposited Plan 225893, Busselton
Lot 226 on Plan 225893, Busselton
Road Reserve (PIN 11438897), Busselton
Road Reserve (PIN 11370230), Busselton
Road Reserve (PIN 1159258), Busselton
Road Reserve (PIN 1159259), Busselton
Road Reserve (PIN 11370233), Busselton
Road Reserve (PIN 11438902), Busselton
Road Reserve (PIN 11370225), Busselton
Road Reserve (PIN 11370220), Busselton
Road Reserve (PIN 11438906), Busselton
Road Reserve (PIN 11370076), Busselton
Road Reserve (PIN 11370197), Busselton
Road Reserve (PIN 11370142), Busselton
Road Reserve (PIN 11621775), Busselton
Road Reserve (PIN 11370143), Busselton
Road Reserve (PIN 11565494), Busselton
Road Reserve (PIN 11700601), Busselton
Road Reserve (PIN 11370161), Busselton
Road Reserve (PIN 11370162), Busselton
Road Reserve (PIN 11370160), Busselton
Road Reserve (PIN 11370148), Busselton
Road Reserve (PIN 11370080), Busselton

Road Reserve (PIN 11370144), Busselton
Water Feature (PIN 11725413), Busselton

3. Area of clearing

The Permit Holder must not clear more than 1 hectare of native vegetation within the area hatched yellow on attached Plan 8193/1.

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. Type of 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.

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 management

When undertaking any clearing 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 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.

8. Fauna management – translocations

Prior to clearing, the Permit Holder must provide to the *CEO* a copy of the fauna licence obtained under the *Biodiversity Conservation Act 2016* for the translocation of Carter’s freshwater mussel (*Westralunio carteri*).

9. Fauna management – pre-clearing inspections

- (a) In relation to the area hatched yellow on attached Plan 8193/1, the Permit Holder must engage a *fauna specialist* to inspect that area immediately prior to, and for the duration of, clearing, for the presence of western ringtail possum(s) (*Pseudocheirus occidentalis*).
- (b) Clearing must cease in any area where a western ringtail possum (*Pseudocheirus occidentalis*) is identified until either:
 - (i) the individual has been removed by a *fauna specialist*; or
 - (ii) the individual has moved on from that area to adjoining *suitable habitat*.
- (c) Any western ringtail possum (*Pseudocheirus occidentalis*) individuals removed in accordance with condition 9(b)(i) of this Permit must be relocated by a *fauna specialist* to *suitable habitat*.
- (d) Where a western ringtail possum(s) (*Pseudocheirus occidentalis*) is identified under condition 9(a) of this Permit, the Permit Holder must provide the following records to the *CEO* as soon as practicable:
 - (i) the number of individuals identified;
 - (ii) the date each individual was identified;
 - (iii) the location where each individual was identified recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings or decimal degrees;
 - (iv) the number of individuals removed and relocated;

- (v) the date each individual was removed;
- (vi) the date each individual was relocated;
- (vii) the location where each individual was relocated to, recorded using a GPS unit set to GDA94, expressing the geographical coordinates in Eastings and Northings or decimal degrees; and details pertaining to the circumstances of any death of, or injury sustained by, an individual.

10. Record keeping

The Permit Holder must maintain the following records:

- (a) In relation to the clearing of native vegetation authorised under this Permit:
 - (i) the boundaries of clearing undertaken on each date, recorded using a Global Positioning System GPS unit set to GDA94, expressing the geographical coordinates in Eastings and Northings or decimal degrees;
 - (ii) the size of the area cleared (in hectares);
 - (iii) actions taken to avoid, minimise and reduce the impacts and extent of clearing in accordance with condition 6 of this Permit;
 - (iv) actions taken to minimise the risk of the introduction and spread of *weeds* and *dieback* in accordance with condition 7 of this Permit; and
 - (v) details required in accordance with fauna management conditions 8 and 9 of this Permit.

11. Reporting

- (a) The Permit Holder must provide to the *CEO* on or before 30 June of each year, a written report:
 - (i) of records required under condition 10 of this Permit; and
 - (ii) concerning activities done by the Permit Holder under this Permit between 1 January to 31 December of the preceding calendar year.
- (b) If no clearing authorised under this Permit has been undertaken, a written report confirming that no clearing under this Permit has been undertaken, must be provided to the *CEO* on or before 30 June of each year.
- (c) Prior to 28 April 2024, the Permit Holder must provide to the *CEO* a written report of records required under condition 10 of this Permit where these records have not already been provided under condition 11(a) of this Permit.

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;

fauna specialist: means a person who holds a tertiary qualification specializing in environmental science or equivalent, and has a minimum of 2 years work experience in fauna identification and surveys of fauna native to the region being inspected or surveyed, or who is approved by the *CEO* as a suitable fauna specialist for the bioregion, and who holds a valid fauna licence issued under the *Biodiversity Conservation Act 2016*;

fill means material used to increase the ground level, or 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;

suitable habitat: means habitat known to support western ringtail possums (*Pseudocheirus occidentalis*) within the known current distribution of the species. This often includes stands of myrtaceous trees

(usually Peppermint Tree (*Agonis flexuosa*)) growing near swamps, watercourses or floodplains, and at topographic low points which provide cooler, often more fertile, conditions.

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 Biodiversity, Conservation and Attractions species-led ecological impact and invasiveness ranking summary, regardless of ranking; or
- (c) not indigenous to the area concerned.



Mathew Gannaway
MANAGER
NATIVE VEGETATION REGULATION

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

28 June 2019

Plan 8193/1

33.653978°S

33.653978°S

115.344539°E

115.355288°E







115.344539°E

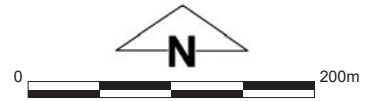
115.355288°E

33.658712°S

33.658712°S

Legend

-  Roads
-  Imagery
-  Clearing Instruments Activities
-  Local Government Authority



1:5,282

(Approximate when reproduced at A4)

GDA 94 (Lat/Long)

Geocentric Datum of Australia 1994

 Date 28 June 2019
 Mat Gannaway

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



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 WESTERN AUSTRALIA
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1. Application details

1.1. Permit application details

Permit application No.: 8193/1
Permit type: Purpose Permit

1.2. Applicant details

Applicant's name: City of Busselton
Application received date: 14 September 2018

1.3. Property details

Property:
 Lot 73 on Deposited Plan 49894, Busselton
 Lot 435 on Deposited Plan 192017, Busselton
 Lot 42 on Deposited Plan 222224, Busselton
 Lot 41 on Deposited Plan 222226 (Crown Reserve 2236), Busselton
 Lot 40 on Deposited Plan 222226 (Crown Reserve 2236), Busselton
 Lot 39 on Deposited Plan 222226 (Crown Reserve 2236), Busselton
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 Lot 380 on Deposited Plan 222226 (Crown Reserve 2236), Busselton
 Lot 37 on Deposited Plan 222226 (Crown Reserve 2236), Busselton
 Lot 230 on Deposited Plan 222226 (Crown Reserve 7442), Busselton
 Lot 229 on Deposited Plan 225893, Busselton
 Lot 226 on Plan 225893, Busselton
 Road Reserve – PIN 11438897, Busselton
 Road Reserve – PIN 11370230, Busselton
 Road Reserve – PIN 1159258, Busselton
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 Road Reserve – PIN 11370161, Busselton
 Road Reserve – PIN 11370162, Busselton
 Road Reserve – PIN 11370160, Busselton
 Road Reserve – PIN 11370148, Busselton
 Water Feature – PIN 11725413, Busselton
 Road Reserve – PIN 11370080, Busselton
 Road Reserve – PIN 11370144, Busselton

Local Government Authority: Busselton, City of
Localities: Busselton

1.4. Application

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

1.5. Decision on application

Decision on Permit Application: Grant

Decision Date: 28 June 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 is at variance to principle (f), may be at variance to principles (b) and (d) and is not likely to be at variance to the remaining clearing principles.

The Delegated Officer considered that the proposed clearing:

- will result in the loss of vegetation growing in, or in association with, an environment associated with a watercourse or wetland;
- may increase the spread of weeds within an adjacent 'Subtropical and Temperate Coastal Saltmarsh' threatened ecological community; and

- may impact Western Ringtail Possum (WRP) and Carter's Freshwater Mussel (CFM) individuals at the time of clearing.

The Delegated Officer considered that:

- the watercourse/wetland values present do not represent conservation significant watercourse/wetland values due to the relatively small amount of watercourse/wetland vegetation to be cleared and its level of historical disturbance;
- the impact to adjacent TEC is considered low and can be mitigated through weed and dieback management measures; and
- the impact to WRP and CFM is considered to be low and can be mitigated through pre-clearance management measures.

Given the above, the Delegated Officer decided to grant a clearing permit subject to weed management conditions.

2. Site Information

Clearing Description

The proposed clearing of 1 hectare of native vegetation within an application area measuring 4.39 hectares (Figure 1) is for the City of Busselton's Causeway Bridge duplication project, which is to duplicate the existing Causeway Road between Molloy Street and the intersection of Albert Street and Queen Street, Busselton.

Vegetation Description

Two mapped Heddl vegetation complexes (Heddl et al. 1980) occur within the application area:

- Vasse complex – Mixture of the closed scrub of *Melaleuca* species fringing woodland of *Eucalyptus rudis* (flooded gum) - *Melaleuca* species and open forest of *Eucalyptus gomphocephala* (tuart) - *Eucalyptus marginata* (jarrah) - *Corymbia calophylla* (marri). Will include areas dominated by *Tecticornia* and *Sarcocornia* species (samphire) near Mandurah and south of the Capel River.
- Quindalup complex – 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 *Melaleuca lanceolata* (Rottnest teatree) - *Callitris preissii* (Rottnest Island pine), the closed scrub of *Acacia rostellifera* (summer-scented wattle) and the low closed *Agonis flexuosa* (peppermint) forest of Geographe Bay (Government of Western Australia, 2018b taken from Heddl et al., 1980 and Webb et al., 2016).

The Vasse complex is mapped over the portion of the application area south of the Lower Vasse River with the Quindalup complex mapped over the remainder.

A reconnaissance level survey was conducted within the application area by Ecosystems Solutions in 2017 which identified four vegetation types (Table 1).

Table 1: vegetation types identified within the application area (Ecosystems Solutions, 2017)

Vegetation Type	Amount within application area (ha)	Percentage within application area (%)
<i>Agonis flexuosa</i> low woodland over <i>Cynodon dactylon</i> grassland (managed)	0.06	1.47
Low woodland of <i>Eucalyptus rudis</i> , <i>Melaleuca raphiophylla</i> , <i>Melaleuca preissii</i> and <i>Agonis flexuosa</i> , open sedgland of <i>Lepidosperma gladiatum</i> , <i>Juncus pallidus</i> and <i>Juncus kraussi</i> with incursions of managed grasses	0.01	0.23
<i>Salicornia quinqueflora</i> , <i>Tecticornia indica</i> subsp. <i>bidens</i> and <i>Salicornia</i> low samphire shrubland	0.01	0.23
<i>Carex divisa</i> closed sedgeland over <i>Stenotaphrum secundatum</i> low open grassland	0.41	9.12

The application area also contains 0.49 hectares of planted vegetation, 3.39 hectares that has been cleared and 0.02 hectares of open water (Strategen, 2018).

Vegetation condition

A site inspection of the application area by the Department of Water and Environmental Regulation (DWER) confirmed that the majority of the application area is in a Completely Degraded condition (DWER, 2018; Strategen, 2018) (Table 2).

Keighery (1994) vegetation condition ratings are defined as follows:

- Pristine: Pristine or nearly so, no obvious signs of disturbance.

- Excellent: Vegetation structure intact, disturbance affecting individual species and weeds are non-aggressive species.
- Very Good: Vegetation structure altered; obvious signs of disturbance.
- Good: Vegetation structure significantly altered by very obvious signs of multiple disturbance; retains basic structure or ability to regenerate.
- Degraded: Basic vegetation structure severely impacted by disturbance; scope for regeneration but not to a state approaching Good condition without intensive management.
- Completely Degraded: The structure of the vegetation is no longer intact and the area is completely or almost completely without native species.

Table 2: Vegetation condition with application area (Strategen, 2018)

Vegetation condition	Amount within application area (ha)	Percentage within application area (%)
Very Good	0.01	0.23
Good to Degraded	0.01	0.23
Degraded	0.40	9.11
Completely Degraded	3.97	90.43
Total	4.39	100

Soil type

The application area that is south of the Vasse River comprises silty estuarine deposits of the Vasse land system and land north of the river comprises calcareous Safety Bay Sands of the Quindalup Dune land system. The estuarine deposits in the southern portion of the application area along Causeway Road have been infilled with imported materials (Strategen, 2018).



Figure 1: Application area hatched blue

3. Minimisation and mitigation measures

The applicant has proposed the following mitigation measures:

- Applicant to replace mature peppermint trees that are proposed to be cleared through planting of at least two peppermint trees per mature peppermint tree cleared, along the Lower Vasse River to provide replacement habitat. Planted roadside and parkland peppermint trees within the application area will be replanted within parkland areas (Strategen, 2018).
- The applicant to install fauna over-pass (rope bridge) immediately north and south of the new bridge to improve connectivity along the Lower Vasse River which is currently broken by the existing Causeway bridge (City of Busselton, 2018).
- Translocation of Carter's freshwater mussel (CFM) individuals prior to clearing to an off-site location approved by DBCA will also occur.

4. Assessment of application against clearing principles

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

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

Biodiversity is defined as the variability among living organisms and the ecosystems of which those organisms are a part and includes the following:

- diversity within native species and between native species;
- diversity of ecosystems; and
- diversity of other biodiversity components (which includes native species, habitats, ecological communities, genes, ecosystems and ecological processes).

A desktop and reconnaissance level survey was conducted of the application area in August 2017 (Ecosystem Solutions, 2017) which identified seven native plant species and six exotic flora species. No Threatened flora species were identified within the application area. According to available Department of Biodiversity, Conservation and Attractions (DBCA) datasets, no records of threatened or priority flora occur within a one kilometre radius of the application area. No significant impacts to threatened or priority flora are expected from the proposed clearing. The number of native species recorded also does not suggest a high level of floral diversity.

According to available DBCA datasets, 0.05 hectares of the application area is mapped as the 'Subtropical and Temperate Coastal Saltmarsh' ecological community. This community is listed as a priority ecological community (PEC) in WA (Priority 3) and as a threatened ecological community (TEC) under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) (Vulnerable). The portion of the community mapped within the application area by DBCA represents the western edge of an approximately 420 hectare occurrence that surrounds a portion of the Vasse Delta Wetlands/Vasse-Wonnerup Estuary. The application area is highly modified containing numerous introduced flora species. It is considered that the proposed clearing of a small portion of the degraded fringes of the community is unlikely to result in significant impacts to the community's conservation status.

As outlined under Principle (b), it is considered that the application area may support habitat for the western ringtail possum. The application area is also likely to support habitat for other native fauna, but due to the largely degraded condition of the vegetation, it is not likely to support a high level of faunal diversity.

Given the above, the application area is not likely to comprise a high level of biodiversity. 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.

Proposed clearing may be at variance to this Principle

A Level 1 fauna survey of the application area and adjoining vegetation targeting conservation significant fauna was undertaken by Ecosystem Solutions in August 2017. The survey confirmed the presence of one fauna species of conservation significance within the application area; the western ringtail possum (WRP) (*Pseudocheirus occidentalis*) (Critically Endangered). An additional nine fauna species of conservation significance were expected to occur:

- Carnaby's cockatoo (*Calyptorhynchus latirostris*) (Endangered);
 - Forest Red-tailed Black Cockatoo (*Calyptorhynchus banksii naso*) (Vulnerable)
 - southwestern brown bandicoot (*Isodon fusciventer*) (Priority 4);
 - blue billed duck (*Oxyura australis*) (Priority 4);
 - long-toed stint (*Calidris subminuta*) (migratory bird protected under an international agreement);
 - peregrine falcon, (*Falco peregrins*) (International agreement);
 - rainbow bee-eater (*Merops ornatus*) (migratory bird protected under an international agreement);
 - eastern great egret (*Ardea modesta*) (migratory bird protected under an international agreement); and
 - common greenshank (*Tringa nebularia*) (migratory bird protected under an international agreement).
- (Ecosystem Solutions, 2017)

The applicant has also advised that Carter's freshwater mussel (CFM) (*Westralunio carteri*) (Vulnerable) is proposed to be translocated from the site where the application area will cross the Lower Vasse River (Strategen, 2018).

WRP

The application area occurs within the mapped Core Habitat defined under the EPBC Act Significant Impact Guidelines (DEWHA, 2009) for the WRP with land to the south comprising Primary Corridors. The application area includes stands of peppermint trees (*Agonis flexuosa*) which comprise habitat for this species. Peppermint trees on the northern foreshore include mature, remnant vegetation with the peppermint trees south of the river comprising of planted roadside and parkland vegetation along Causeway Road and Rotary Park (Ecosystem Solutions, 2017). It is considered for 0.05 hectares of completely degraded (Keighery, 1994) condition vegetation within the application area to represent foraging habitat for the WRP. In total two mature Peppermint trees are proposed to be cleared along with seven juvenile peppermint trees. In addition, no individual WRPs or dreys were observed within the application area during surveys (Ecosystem Solutions, 2017). Therefore, it is considered for the application area to have limited habitat values for the WRP.

The application area is in close proximity to vegetation that has been identified as significant habitat for the WRP and the proposed clearing may directly impact WRP individuals that may occur within the application area during the time of clearing. A pre-clearing fauna management condition will mitigate this impact to individual WRP.

The applicant has proposed to replace mature peppermint trees that are proposed to be cleared through planting of at least two peppermint trees per mature peppermint tree cleared, along the Lower Vasse River to provide replacement habitat for the WRP. Planted roadside and parkland peppermint trees within the application area will also be replanted within parkland areas (Strategen, 2018). The applicant also proposes to install fauna over-pass (rope bridge) immediately north and south of the new bridge to improve connectivity along the Lower Vasse River which is currently broken by the existing Causeway bridge (City of Busselton, 2018).

Carnaby's cockatoo

The fauna survey did not observe any black cockatoos (i.e. Carnaby's, Baudin's or forest red-tailed) or associated breeding or foraging evidence within the application area. No trees with suitable breeding hollows for black cockatoos were recorded (Ecosystem Solutions, 2017).

Due to the vegetation types present, the application area provides minimal suitable foraging habitat for black cockatoos. The proposed clearing is not likely to result in significant impacts to Carnaby's cockatoo or any other black cockatoo species.

Carter's freshwater mussel

CFM is the only species of freshwater mussel in southwestern Australia. The current distribution of CFM is bounded by Gingin Brook in the north to the Kent, Goodga and Waychinicup Rivers in the south, within 50-100 kilometres of the coast. The species has been found to have undergone a 49 per cent reduction in extent of occurrence in less than three generations, due primarily to secondary salinisation. Apart from salinity, pereniality of stream flow was identified to be the other major limiting variable in the distribution of CFM, suggesting that habitat drying, inadequate provision of environmental stream flows and dewatering could pose further conservation constraints on the species (Klunzinger et al., 2015).

Dehydration, heat stress, nutrient pollution, cattle trampling and predation by feral pigs have also been identified as current threats to CFM. Maintaining shading riparian vegetation is recommended in relation to limiting dehydration and heat stress related impacts. The species is also most abundant amongst submerged tree root complexes, along the edges of stream banks and amongst woody debris/leaf litter out of direct streamflow or on the leeward side of logs in faster-flowing riffle zones (Threatened Species Scientific Committee, 2018).

The Lower Vasse River is known to support CFM. The proposed clearing will result in the loss of a small area of riparian vegetation along the Lower Vasse River which may provide habitat and shading for CFM. The loss of this vegetation may lead to a reduction in population size, however, it is considered that the impacts are likely to be minor noting the size of clearing proposed and that secondary salinisation and impacts to water regimes are the main threats to the species.

Translocation of CFM individuals prior to clearing to an off-site location approved by DBCA will also occur.

Other fauna

The southwestern brown bandicoot, blue billed duck, long-toed stint, glossy ibis and common greenshank are all known to utilise wetland habitats. The application area includes a small area of wetland and riparian vegetation and may provide habitat for these species as well as a range of other wetland fauna. However, the vegetation condition is largely degraded owing to historical disturbances. Given this and the relatively small size of clearing proposed, no significant impacts to any of these species are expected.

Given the above, the proposed clearing may be at variance to this Principle. Management conditions are likely to mitigate any impacts to fauna.

(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

A desktop and reconnaissance level survey was conducted of the application area in August 2017 (Ecosystem Solutions, 2017) which identified seven native plant species and six exotic flora species. No Threatened flora species were identified within the application area.

According to available DBCA datasets, no records of threatened flora have been mapped within the application area. Given this and that the majority of the application area is in a completely degraded (Keighery, 1994) condition, the application area is not likely to include, or be necessary for the continued existence of, threatened flora. The proposed clearing is not likely to be at variance to this 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 may be at variance to this Principle

A federally listed TEC 'Subtropical and Temperate Coastal Saltmarsh' is mapped adjacent to and within part of the southern section of the application area.

According to available DBCA datasets, approximately 0.05 hectares of this TEC occurs within the application area.

This TEC occurs on sandy or muddy substrate and consist of dense to patchy areas of characteristic costal saltmarsh plant species (Department of Sustainability, Environment, Water, Population and Communities, 2013).

The portion of the application area that is adjacent to this TEC has been mapped by Strategen (2018) as occurring in degraded

(Keighery, 1994) condition. The portion of the community mapped within the application area by DBCA represents the western edge of an approximately 420 hectare occurrence that surrounds a portion of the Vasse Delta Wetlands/Vasse-Wonnerup Estuary. The application area is highly modified already containing numerous introduced flora species. It is considered that the proposed clearing of a small portion of the degraded fringes of the community is unlikely to result in significant impacts to the community's conservation status.

The proposed clearing may increase the spread of weeds and dieback within the adjacent TEC and therefore the proposed clearing may be at variance to this Principle. Weed and dieback management measures will help to mitigate further impacts to this TEC.

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

As indicated in Table 1, the current vegetation extents for the Swan Coastal Plain bioregion and Heddle vegetation complexes Vasse and Quindalup are greater than 30 per cent.

The local area (10 kilometre radius excluding ocean) surrounding the application area measures approximately 19,000 hectares. Based on available datasets, approximately 2,500 hectares of remnant native vegetation remains in this area (i.e. approximately 13 per cent). It is considered that the local area has been extensively cleared.

As stated under principle a), the application area is not considered to contain a high level of biodiversity given its predominantly degraded condition and lack of habitat for threatened flora and fauna species. Given, this the application area is not considered a significant remnant.

The proposed clearing is not likely to be at variance to this Principle.

Table 1. Vegetation extent remaining statistics (Government of Western Australia, 2018a; Government of Western Australia, 2018b)

	Pre-European extent (ha)	Current extent (ha)	Extent remaining (%)	Current extent in all DBCA managed lands (ha)	Extent remaining in all DBCA managed lands (proportion of Pre-European extent) (%)
IBRA bioregion					
Swan Coastal Plain	1,501,222	578,997	38.6	222,767	14.8
Heddle vegetation complex					
Vasse	15,692	4,929	31.4	2,287	14.6
Quindalup	54,574	32,983	60.4	5,992	11.0

(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

The application area intersects the Lower Vasse River and the Vasse Delta Wetlands which both feed into the Vasse-Wonnerup System RAMSAR site located approximately 1.4 kilometre to the east.

According to the reconnaissance flora survey undertaken by Ecosystem Solutions (2017), 0.43 hectares of the 1 hectare application area consist of wetland or riparian vegetation.

According to DBCA's Geomorphic Wetlands of the Swan Coastal Plain dataset, approximately 0.9 hectares of the 4.39 hectare application footprint is mapped as "estuary- waterbody" (i.e. the portion that intersects the Lower Vasse River). The majority of the remainder of the application footprint is mapped as "estuary-peripheral" (i.e. the portion that intersects the Vasse Delta Wetlands). It is considered that the vegetation within the application area that crosses the Lower Vasse River is growing in, or in association with a watercourse or wetland. Therefore the proposed clearing is at variance to this Principle.

Wetlands in the Geomorphic Wetlands of the Swan Coastal Plain dataset have been evaluated and assigned a management category (or spatially divided into multiple categories where relevant) based on their ecological values. There are three management categories:

- Conservation – wetlands which support a high level of attributes and functions;
- Resource Enhancement – wetlands which may have been partially modified but still support substantial ecological attributes and functions; and
- Multiple Use – wetlands with few remaining important attributes and functions. (DBCA, 2014)

The "estuary-waterbody" within the application area has been assigned the management category Conservation and the "estuary-peripheral" has been assigned the management category Multiple Use. Noting the assigned management category, the proposed clearing within the "estuary-peripheral" is not likely to be significant.

The majority of the “estuary-waterbody” area of the application area was determined to be in Completely Degraded condition (Ecosystem Solutions, 2017). Given the vegetation condition and the relatively small size of clearing, impacts to the “estuary-waterbody” are not likely to be significant.

(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

Significant soil erosion from high intensity winds is considered unlikely to occur as a result of the proposed clearing due to the wet setting of the application area and the small scale (1 hectare) of the proposed clearing. Significant soil erosion from high intensity rainfall is also considered unlikely to occur due to the flat topography of the application area.

The application area is not located in an area of the State considered to be highly susceptible to dryland salinity.

The proposed clearing is not likely to result in significant soil acidification noting the small scale of clearing proposed and the high level of historical disturbance to the application area.

Given the above, appreciable land degradation is not expected to occur. The proposed clearing is not likely to be at variance to this 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.

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

The closest DBCA managed conservation area to the application area is a Nature Reserve (Crown Reserve 48837) located approximately 440 metres west. Crown Reserve 48837 is one of a series of conservation areas that are considered to form part of an east to west ecological linkage between the Broadwater Nature Reserve and the Vasse-Wonnerup Estuary.

The proposed clearing will contribute to the fragmentation of this linkage however, given the small scale of the proposed clearing within this linkage, impact is considered limited. Therefore the proposed clearing is not likely to 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

The application area intersects the Lower Vasse River and the Vasse Delta Wetlands which both feed into the Vasse-Wonnerup System RAMSAR site located approximately 1.4 kilometre to the east.

The application area is not located in an area of the State considered to be highly susceptible to dryland salinity. The proposed clearing is not considered likely to cause deterioration of groundwater through salinity.

The application area has historically been highly modified and is located within an urban setting. This is reflected in the Multiple Use management category assigned to the portion of the Vasse Delta Wetlands within the application area. Noting this and the small scale of clearing proposed, significant deterioration in the water quality of the Vasse Delta Wetlands is not expected to occur.

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

The application area has historically been highly modified. Given this and the relatively small size of the application area, the vegetation present is unlikely to be playing a significant role in maintaining existing water regimes within the wider catchment. The proposed clearing is not likely to cause, or exacerbate, the incidence or intensity of flooding.

Planning instruments and other relevant matters.

The applicant has undertaken extensive work to identify an overall strategic direction for the ongoing development, management and improvement of the local road network in and around Busselton. A key outcome of this work was the need to duplicate the causeway road to provide greater capacity to convey traffic and alleviate forecast congestion along Causeway Road from the intersection of Albert Street and Queen Street to Molloy Street (Strategen, 2018).

The Causeway Road bridge duplication project was referred to the Commonwealth Department of Environment and Energy under the *Environmental Protection, Biodiversity and Conservation Act* (EPBC) 1999 in October 2018 (EPBC No. 2018/8309). On the 4 April 2019 the referral was considered not a controlled action under the EPBC Act.

The construction of the Causeway bridge may impact on water quality downstream, which has the potential to impact Vasse River Delta Wetlands and migratory waterbird habitat (Strategen, 2018). The applicant has proposed the following to mitigate impacts of the construction:

- Development and implementation of a construction environmental management plan (CEMP)
- CEMP includes spill response procedures and erosion/sediment controls to prevent water quality impacts

- The upgraded road and bridge will drain away from the Vasse River and into bio filtration gardens that will treat and infiltrate stormwater
- The river banks below the bridge will be thickly vegetated with Sword Sedge to minimise erosion and scour (Strategen, 2018).

An Aboriginal heritage survey was commissioned by the applicant for the project. No Aboriginal heritage sites were recorded within the application area (Strategen, 2018).

The clearing application is located within the Busselton-Capel Groundwater Area as proclaimed under the *Rights in Water and Irrigation Act 1914*. If dewatering is required the applicant has advised that they will apply for a Section 5C Licence for construction dewatering under the *Rights in Water and Irrigation Act 1914*.

The clearing permit application was advertised on the DWER website on 20 November 2018 with a 20 day submission period. One public submission was received in relation to this application. Issues raised include but not limited to:

- Impacts to WRP, phascogales and waterbirds;
- Impacts to mature peppermint trees;
- lack of public consultation by the City of Busselton;
- impacts to the use and enjoyment of Rotary Park; and
- access impacts to the Old Butter Factory Museum.

Consideration of public submissions:

Impacts to WRP and waterbirds have been discussed under Principle (b). Impacts to WRPs and their habitat (e.g. mature peppermint trees, paperbarks) are noted and not considered significant.

In relation to impacts to phascogales (*Phascogale tapoatafa* subsp. *wambenger*), it was determined that suitable habitat for this species is not present (Strategen, 2018).

The applicant has advised that extensive public consultation has been undertaken. A community and stakeholder consultation program was held in 2017 and 2018 and included advertisement in the Busselton-Dunsborough Mail, advertisement in the City newsletter to ratepayers, factsheets in the Council administration lobby and City website, and community information sessions (City of Busselton, 2018).

Noting the above, it is considered that the public submission received have not raised any issues that would warrant refusal of the application.

5. References

- City of Busselton (2018) EPBC Referral documentation for the Causeway Bridge Duplication, Busselton project (EPBC Number: 2018/8309). Available from <http://epbcnotices.environment.gov.au/referralslist/>. Accessed 12 June 2019
- Commonwealth of Australia (2001). National Objectives and Targets for Biodiversity Conservation 2001-2005, Canberra
- Department of Biodiversity, Conservation and Attractions (2014). Wetlands Mapping. 30 June 2014. Available from: <https://www.dpaw.wa.gov.au/management/wetlands/mapping-and-monitoring?showall=&start=7> (accessed 11 February 2019).
- Department of Biodiversity, Conservation and Attractions (DBCA) (2018). Advice received from the South West Region in relation to clearing permit applications CPS 8193/1 and CPS 8195/1. Received 17 December 2018 (DWER Ref: A1749786).
- Department of Water and Environmental Regulation (DWER) (2018). Site Inspection Report – CPS 8193/1. Site inspection undertaken 5 December 2018 (DWER Ref: A1748448).
- Department of Sustainability, Environment, Water, Population and Communities (2013). *Conservation Advice for SUBTROPICAL AND TEMPERATE COASTAL SALTMARSH*. Canberra: Department of Sustainability, Environment, Water, Population and Communities. Available from: <http://www.environment.gov.au/biodiversity/threatened/communities/pubs/118-conservation-advice.pdf>. In effect under the EPBC Act from 10-Aug-2013.
- Ecosystem Solutions (2017). Reconnaissance Flora, Vegetation and Fauna Survey – Busselton Strategic Network Corridors. Unpublished report prepared for the City of Busselton, 17 November 2017 (DWER Ref: A1721346).
- Government of Western Australia. (2018a). 2017 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report). Current as of December 2017. WA Department of Biodiversity, Conservation and Attractions. <https://catalogue.data.wa.gov.au/dataset/dbca-statewide-vegetation-statistics>
- Government of Western Australia (2018b). 2017 South West Vegetation Complex Statistics. Current as of October 2017. WA Department of Biodiversity, Conservation and Attractions, Perth. <https://catalogue.data.wa.gov.au/dataset/dbca>
- Hedde, E.M., Loneragan, O.W. and Havel, J.J. (1980). Vegetation of the Darling System. In: DCE 1980 Atlas of Natural Resources, Darling System, Western Australia. Department of Conservation and Environment, Perth, 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.

Klunzinger, M.W., Beatty, S.J., Morgan, D.L., Pinder, A.M. and Lymbery, A.J. (2015). Range decline and conservation status of *Westralunio carteri* Iredale, 1934 (Bivalvia : Hyriidae) from south-western Australia. Australian Journal of Zoology 63, 127-135.

Strategen (2018). Causeway Rd Duplication Project – Native vegetation clearing permit application – supporting documentation. Unpublished report prepared for the City of Busselton, September 2018 (DWER Ref: A1721346).

Shedley, E. and Williams, K. (2014). An assessment of habitat for western ringtail possum (*Pseudocheirus occidentalis*) on the southern Swan Coastal Plain. Unpublished report for the Department of Parks and Wildlife, Bunbury, Western Australia.

Threatened Species Scientific Committee (2018). Conservation Advice *Westralunio carteri* Carter's freshwater mussel. Canberra: Department of the Environment and Energy. Available from: <http://www.environment.gov.au/biodiversity/threatened/species/pubs/86266-conservation-advice-15022018.pdf>. In effect under the EPBC Act from 15-Feb-2018.

Geographic Information System (GIS) datasets:

- Cadastre, Land Tenure
- Hydrography, linear
- Interim Biogeographic Regionalisation of Australia (IBRA)
- Landgate Imagery
- Native Vegetation Current Extent
- Pre-European Vegetation
- DBCA Species and Communities (accessed 11 February 2019)