



## CLEARING PERMIT

*Granted under section 51E of the Environmental Protection Act 1986*

### PERMIT DETAILS

Area Permit Number: 7538/1

File Number: DER2017/000437-1

Duration of Permit: From 8 September 2019 to 8 September 2021

### PERMIT HOLDER

Roman Catholic Archbishop of Perth

### LAND ON WHICH CLEARING IS TO BE DONE

Lot 4800 on Deposited Plan 52626, The Vines

### AUTHORISED ACTIVITY

The Permit Holder shall not clear more than 0.73 hectares of native vegetation within the area hatched yellow on attached Plan 7538/1.

### CONDITIONS

#### 1. 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.

#### 2. Weed and Dieback 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 known *dieback* or *weed*-affected soil, *mulch*, *fill* or other material is brought into the area to be cleared; and
- (c) restrict the movement of machines and other vehicles to the limits of the areas to be cleared.

#### 3. Direction of clearing

The Permit Holder shall conduct clearing in a slow progressive manner from one direction to the other (e.g. east to west) to allow fauna to move into adjacent native vegetation ahead of the clearing activity.

#### 4. Records must 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); and

- (d) actions taken to avoid, minimise and reduce the impacts and extent of clearing in accordance with condition 1 of this Permit.
- (e) actions taken to minimise the risk of the introduction and spread of *weeds* and *dieback* in accordance with condition 2 of this Permit.

**5. Records must be kept**

- (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 4 of this Permit; and
  - (ii) concerning activities done by the Permit Holder under this Permit between 1 January and 31 December of the preceding calendar year.
- (a) If no clearing authorised under this Permit was undertaken between 1 January to 31 December of the preceding calendar year, a written report confirming that no clearing under this permit has been carried out, must be provided to the *CEO* on or before 30 June of each year.
- (b) Prior to 8 June 2021 the Permit Holder must provide to the *CEO* a written report of records required under condition 4 of this Permit where these records have not already been provided under condition 5(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;

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



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Mathew Gannaway  
MANAGER  
NATIVE VEGETATION REGULATION





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

9 August 2019

# Plan 7538/1



## Legend

-  Roads - Local and Others
-  Imagery
-  Cadastre
-  Clearing Instruments Activities



0  100m

1:2,179

(Approximate when reproduced at A4)

GDA 94 (Lat/Long)

Geocentric Datum of Australia 1994

*ME-6*

Date 9 August 2019

Mathew Gannaway

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



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## 1. Application details

### 1.1. Permit application details

Permit application No.: CPS 7538/1  
Permit type: Area Permit

### 1.2. Applicant details

Applicant's name: The Roman Catholic Archbishop of Perth  
Application received date: 23 March 2017

### 1.3. Property details

Property: Lot 4800 on Deposited Plan 52626, The Vines  
Local Government Authority: Swan, City of  
Localities: The Vines

### 1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
0.73 (as revised)		Mechanical Removal	Stockpile/bulk earthworks bushfire hazrd reduction

### 1.5. Decision on application

Decision on Permit Application: Grant  
Decision Date: 9 August 2019

Reasons for Decision: The clearing permit application was received on 23 March 2017 and 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 (a), (b), (g) and (i), and is not likely to be at variance to the remaining principles.

The Delegated Officer noted that the proposed clearing will directly impact on native vegetation growing in association with a 'conservation category' wetland (CCW), may result in land degradation leading to deterioration in the quality of surface water that may also impact on the hydrological and ecological values of a nearby CCW. A weed and dieback management condition has been placed on the clearing permit to minimise the risk of weeds and dieback spreading into adjacent vegetation.

The Delegated Officer noted that the application may impact upon suitable habitat for the quenda / southern brown bandicoot. However it is noted that the habitat for the quenda is not limited to the application area with similar habitat of equal or better value remaining in the local area. To avoid potential impacts to quenda that may occupy the application area, the Delegated Officer has placed a directional clearing condition on the Permit.

In determining to grant the clearing permit, the Delegated Officer noted that development approval had been obtained from the City of Swan, and that bushfire mitigation is within the parameters of State Planning Policy 3.7 - Planning in Bushfire Prone Areas. The Delegated formed the view that the proposed clearing is justified in accordance to the negotiated planning outcome which resulted in the transferring of a 27 (26.8) hectare portion to the Western Australian Planning Commission as a Bush Forever site and was satisfied that no further land swap (offset) was needed in relation to the residual environmental impacts identified during the assessment.

## 2. Site Information

**Clearing Description:** The revised application is for the clearing of 0.73 hectares of native vegetation within Lot 4800 on Deposited Plan 52626 (Lot 4800), The Vines, for the purposes of preliminary works for school construction and bushfire hazard reduction.

**Vegetation Description and Condition:** The application area is mapped as the following Heddl vegetation complexes:

- Southern River Complex: Open Woodland of *Corymbia calophylla* (marri) – *Eucalyptus marginata* (jarrah) – *Banksia* species with fringing Woodland of *Eucalyptus rudis* (flooded gum) – *Melaleuca raphiophylla* (swamp paperbark) along creek beds; and
- Bassendean Complex-North: vegetation ranges from a Low Open Forest and Low Open Woodland of *Banksia* species *Eucalyptus tottiana* (pricklybark) to Low Woodland of *Melaleuca* species and Sedgelands which occupy the moister sites (Heddl et al., 1980).

In support of the application, the applicant provided a flora and vegetation survey undertaken in March 1999. The 1999 flora and vegetation survey indicates that the application area is likely to comprise three vegetation units in 'Excellent' condition:

- *Acacia saligna* (golden wattle) Open to Closed Tall Scrub;
- *Melaleuca viminea* (mohan) Open to Closed Tall Scrub; and
- *Eucalyptus rudis* Open to Closed Forest (Weston, 1999).

A site inspection was undertaken by officers of the former Department of Environment Regulation (DER) on 22 May 2017. The site inspection found that the vegetation within the application area comprises predominantly of *Eucalyptus rudis*, *Melaleuca raphiophylla* and scattered *Banksia littoralis* (swamp banksia) over *Melaleuca* sp. and *Acacia saligna* with a variable ground layer dominated by *Lepidosperma* sp., generally in 'Very Good' to 'Good' condition with weed invasion around the edges (refer to Figures 4, 5 and 6) (DER, 2017).

In response to a request by the Department of Water and Environmental Regulation (DWER) for further information to inform the assessment of the application, the applicant provided a Level 2 flora and vegetation survey undertaken in September 2017. The 2017 flora and vegetation survey identified two vegetation units within the application area varying between 'Very Good' and 'Good' condition:

- Open Forest or Tall Woodland of *Eucalyptus rudis* subsp. *rudis* and *Melaleuca raphiophylla* with occasional *Melaleuca preissiana* (moonah) over Sedgeland dominated by *Lepidosperma longitudinale* (pithy sword-sedge) and *Baumea juncea* (bare twigrush) – inferred to be floristic community type 11; and
- Woodland of *Eucalyptus rudis* subsp. *rudis* and *Melaleuca preissiana* over Low Shrubland of *Xanthorrhoea preissii* (grasstree) over Sedgeland of *Dielsia stenostachya* over Open Ferns of *Pteridium esculentum* (bracken) – inferred to be floristic community type 4 (Bennett, 2017).

Vegetation condition definitions:

- Excellent: Vegetation structure intact, disturbance affecting individual species and weeds are non-aggressive species (Keighery, 1994).
- Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery, 1994).
- Good: Vegetation structure significantly altered by very obvious signs of multiple disturbance; retains basic structure or ability to regenerate (Keighery 1994).

**Soil / Landform Type:** The application area is mapped as the Bassendean, Jandakot Phase system, described as grey sand over pale yellow sands generally underlain by humic and iron podsols (Schoknecht et al., 2004).

**Comment** The local area considered in the assessment of this application is defined as a 10 kilometre radius from the perimeter of the application area. The local area retains approximately 45 per cent native vegetation cover.



Figure 1: Map of original application area – hatched yellow (Coterra Environment, 2017)



Figure 2: Map of revised application area – shaded yellow (Coterra Environment, 2017)

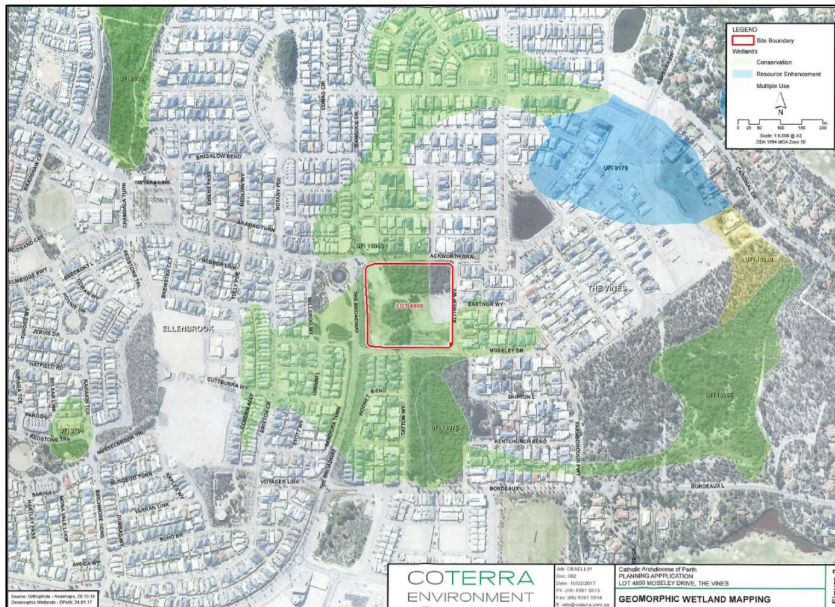


Figure 3: Extent of Lot 4800 within 'conservation category' wetland (Coterra Environment, 2017)



Figure 4: Typical vegetation along southern edge of northern portion of application area



Figure 5: Typical vegetation within central portion of application area



**Figure 6: Typical vegetation within southern portion of application area**

### 3. Minimisation and mitigation measures

The applicant revised the application during the assessment to exclude 0.85 hectares of native vegetation within the northern portion of the original application area (indicated by the area shaded green in Figure 2), in accordance with the City of Swan's development approval. The exclusion of the 0.85 hectare remnant reduced the proposed clearing area to 0.73 hectares of native vegetation.

### 4. Assessment of application against clearing principles

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

##### Proposed clearing may be at variance to this Principle

According to available databases, 27 species of priority flora have been recorded within the local area. Of these, two Priority 3 species and one Priority 4 species have been recorded from habitats with similar soil and vegetation types as found within the application area. Noting the known ranges of these species and their preferred habitats, including soil and vegetation types, the application area may comprise suitable habitat for one of these species. The former Department of Parks and Wildlife (Parks and Wildlife) advised that *Cyathochaeta teretifolia* (Priority 3) may occur within the application area (Parks and Wildlife, 2017a):

- *Cyathochaeta teretifolia* (Priority 3) is known from 39 recorded populations between Bullsbrook to Augusta and along the south coast to west of Albany, from sand and sandy clay associated with swamps and creek edges (WA Herbarium, 1998-). Noting the preferred habitats for this species, including soil/landform and vegetation types, the application area may comprise suitable habitat for this species. Priority 3 flora species are known from several locations, and these species do not appear to be under imminent threat, or from few but widespread locations with either large population size or significant remaining areas of apparently suitable habitat, much of it not under imminent threat (Jones, 2015).

According to available databases, four priority ecological communities (PEC) and six threatened ecological communities (TEC) have been recorded within the local area. Approximately 42 per cent (0.31 hectares) of the application area (within the northern and central portions) is mapped as the ecological community 'Low lying *Banksia attenuata* woodlands or shrublands ('community type 21c')', which is listed as a Priority 3 PEC by the Department of Biodiversity, Conservation and Attractions (DBCA) and is a component of the Commonwealth-listed 'Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region' (Banksia Woodlands) TEC. The site inspection found that vegetation representative of this PEC does not occur within the application area, and that the application area is unlikely to resemble the remaining three PECs recorded in the local area (DER, 2017).

As outlined in Section 2, in response to DWER's request for further information, the applicant provided a 2017 flora and vegetation survey of the application area. No threatened or priority species, or PECs or TECs, were located during the 2017 flora and vegetation survey (Bennett, 2017). Threatened flora are discussed further under Principle (c). TECs are discussed further under Principle (d).

Of the conservation-significant fauna species recorded within the local area, the application area may comprise suitable habitat for the quenda / southern brown bandicoot (*Isodon obesulus* subsp. *fusciventer*; Priority 4). Habitats for indigenous fauna are discussed further under Principle (b).

The majority of the application area is mapped as a 'conservation category' wetland (CCW) UFI 15065 'Bordeaux Lane' (refer to Figure 3). As indicated in Figure 3, the mapped wetland complex within which the application area is located has been extensively cleared for development. Approximately 13.5 per cent of this palusplain area retains values consistent with CCW criteria (Parks and Wildlife, 2017b). Wetlands and watercourses are discussed further under Principle (f).

Noting the extent of development in the local area particularly in close proximity to the application area (refer to Figure 1), the condition of the vegetation within the application area, may contain quenda (Priority 4) habitat, and the presence of a CCW, the application area may comprise a high level of biodiversity. The proposed clearing may 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

As outlined in Section 2, the vegetation within the application area is in 'Very Good' (Keighery, 1994) to 'Good' (Keighery, 1994) condition, and comprises predominantly of *Eucalyptus rudis*, *Melaleuca raphiophylla* and scattered *Banksia littoralis* over *Melaleuca* sp. and *Acacia saligna* with the ground cover consisting of a variety of species with the most prominent being *Lepidosperma* sp. (DER, 2017).

According to available databases, nine threatened fauna, three fauna protected under international agreement, two other specially protected fauna and nine priority fauna have been recorded within the local area (DBCA, 2007-). Of these, the application area may contain suitable habitat for the quenda / southern brown bandicoot.

The quenda / southern brown bandicoot prefers areas with dense understorey vegetation, particularly around swamps and watercourses that provides protection from predators (DEC, 2012). This species is also commonly found around wet areas adjacent to dryland vegetation (DEC, 2012). The site inspection identified that suitable habitat for quenda is present within the application area, and observed a number of diggings and scats consistent with quenda activity (DER, 2017). Noting the extent of development in the local area particularly in close proximity to the application area (refer to Figure 1), the application area may comprise suitable habitat for this species. However noting the fragmented application area, the relatively small amount of proposed clearing and that vegetation in a similar condition remain in the local area, the application area is not considered significant habitat for quenda.



Given the above, the application area may comprise the whole or part of, or be necessary for the maintenance of suitable habitat for quenda. The proposed clearing may be at variance to this Principle.

Whilst the application is not considered to be significant habitat for quenda, its presence was noted during the site inspection report. To avoid potential impacts to quenda individuals that may occupy the application area at the time of clearing, a directional clearing condition has been placed on the Permit.

**(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**

According to available databases, four threatened flora species have been recorded within the local area. The closest record of a threatened flora species is approximately 620 metres from the application area. Noting the known ranges of these species and their preferred habitats, including soil and vegetation types, the application area may comprise suitable habitat for three of these species.

Parks and Wildlife advised that the following threatened flora species may occur within the application area (Parks and Wildlife, 2017a):

- *Grevillea curviloba* subsp. *curviloba* (critically endangered): Parks and Wildlife advised that critical habitat for this species includes low-lying sites similar to that identified during DER's site inspection (Parks and Wildlife, 2017a). Parks and Wildlife advised that this species also occurs within occurrences of the 'Shrublands and Woodlands on Muchea Limestone' (Muchea Limestone) TEC at The Vines and in Muchea (Parks and Wildlife, 2017a).
- *Trithuria occidentalis* (critically endangered): Parks and Wildlife advised that this species is known from one population which occurs partly submerged on the edge of shallow, winter-wet claypans within an open heath of *Melaleuca lateritia* (robin redbreast bush) and *Melaleuca viminea* over Herbland of *Rhodanthe pyrethrum*, *Liparophyllum capitatum*, *Stylidium* sp., *Centrolepis* sp., *Aphelia drummondii*, *Trithuria submersa* and *Trithuria bibracteata* (Parks and Wildlife, 2017a). Parks and Wildlife noted that DER's site inspection found that portions of the application area contain *Melaleuca viminea*, however little information regarding understorey species was noted (Parks and Wildlife, 2017a). Parks and Wildlife advised that this species is unlikely to be found in areas highly infested with weeds but has a higher potential to occur in the less disturbed areas containing *Melaleuca viminea* (Parks and Wildlife, 2017a).
- *Eleocharis keigheryi* (vulnerable): Parks and Wildlife advised that the third species occurs in clay, sandy loam in seasonal claypans and freshwater creeks and wetlands, associated with vegetation that can include *Melaleuca* species (Parks and Wildlife, 2017a). Parks and Wildlife advised that this species could potentially occur within wetland habitats within the application area (Parks and Wildlife, 2017a).

As outlined in Section 2, the 1999 flora and vegetation survey indicates that the application area is likely to include *Acacia saligna* Open to Closed Tall Scrub and *Melaleuca viminea* Open to Closed Tall Scrub (Weston, 1999). The 1999 flora and vegetation survey noted that *Melaleuca viminea*-*Acacia saligna* Open to Closed Tall Scrub is the habitat and locality where there are several populations of the threatened flora *Grevillea curviloba* subsp. *curviloba* (Weston, 1999).

On review of the 1999 flora and vegetation survey, Parks and Wildlife advised that the objectives, methods and timing of the 1999 flora and vegetation survey are not sufficient to enable confidence in determining the likely presence of threatened flora within the application area. Parks and Wildlife noted that *Trithuria occidentalis* and *Eleocharis keigheryi* would not have been visible at the time of the 1999 flora and vegetation survey as any winter-wet areas would be dry (Parks and Wildlife, 2017a). Parks and Wildlife recommended that a targeted flora survey be undertaken for the rare flora species outlined above (Parks and Wildlife, 2017a).

As outlined under Section 2, in response to DWER's request for further information, the applicant undertook a Level 2 flora and vegetation survey in September 2017. As discussed under Principle (a), no threatened species were located during the 2017 flora and vegetation survey (Bennett, 2017). The 2017 flora and vegetation survey recommended that an additional site visit be undertaken once the water had dispersed to confirm that *Trithuria occidentalis* is not present (Bennett, 2017).

On review of the 2017 flora and vegetation survey, DBCA advised that it is of concern that some portions of the application area were too inundated to record the threatened flora species outlined above, however noted that these species should have been identifiable at the time of the survey using the methods outlined in the survey report (DBCA, 2017a). DBCA advised that from the information provided, it appears unlikely that the above species of threatened flora occur within the application area (DBCA, 2017a).

Given the above, 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 is not likely to be at variance to this Principle**

According to available databases, six TECs have been mapped within the local area. The application area is within the mapped buffers of two of these TECs, being the Muchea Limestone TEC and 'Communities of Tumulus Springs (Organic Mound Springs, Swan Coastal Plain)' (Organic Mound Springs) TEC. Approximately 42 per cent (0.31 hectares) of the application area (within the northern and central portions) is mapped as the Banksia Woodlands TEC.

The site inspection found that surface water was present within the application area (DER, 2017). This may indicate a permanent water supply to the application area, and may indicate the presence of suitable habitat for the Organic Mound Springs TEC.

Parks and Wildlife advised that identification of the Muchea Limestone TEC is based on substrates that include sands, clays, sandy loams, and limestone pebbles, rocks or Muchea limestone at depth (Parks and Wildlife, 2017c). Parks and Wildlife advised that the substrate of a nearby occurrence of this TEC is described as limestone outcropping in brown sandy clay / grey sand (Parks and Wildlife, 2017c). Parks and Wildlife advised that, based on DER's site inspection, the Banksia Woodlands TEC is not likely to occur within the application area (Parks and Wildlife 2017c). Notwithstanding, Parks and Wildlife recommended a Level 2 vegetation survey to verify whether any TECs are present, in particular the Muchea Limestone TEC (Parks and Wildlife 2017c).

As outlined under Section 2, in response to DWER's request for further information, the applicant undertook a Level 2 flora and vegetation survey undertaken in September 2017. As discussed under Principle (a), no TECs were located during the flora and vegetation survey (Bennett, 2017). The 2017 flora and vegetation survey infers that the vegetation units present as floristic community types 11 and 4 (Bennett, 2017).

On review of the 2017 flora and vegetation survey, DBCA advised that no statistical analysis was completed, that the methods used to determine the floristic community types is not evident in the report, that the substrate was not visible at the time of survey as it was under water, and that no specific survey appears to have been completed for calcareous floral markers so it is not possible to verify if limestone occurred (DBCA, 2017a). DBCA noted that from the key flora and habitat characteristics outlined in the 2017 flora and vegetation survey, the vegetation units are most likely to be floristic community types 11 and 5, and advised that none of floristic community types 11, 5 or 4 comprises a TEC (DBCA, 2017a). DBCA advised that based on available evidence it appears unlikely that any TECs occur in the wetlands within the application area (DBCA, 2017a).

Given the above, the application area is not likely to comprise the whole or a part of, or be necessary for the maintenance of, a TEC. 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). As indicated in Table 1, the remaining extents of native vegetation within the bioregion are above the 30 per cent threshold. Mapped vegetation type Bassendean Complex – North is also above the 30 per cent threshold, however Southern River Complex falls below this level which indicates that this vegetation complex has been extensively cleared. Notwithstanding, the Environmental Protection Authority (EPA) recognises the Perth Metropolitan Region to be a constrained area, within which a minimum 10 per cent representation threshold for ecological communities is recommended (EPA, 2008). Noting that the EPA considers a constrained area to be an area where there is an expectation that development will proceed, and that the application area is zoned 'Urban' in the Perth Metropolitan Region Scheme, the 10 per cent threshold applies in this instance of which the Southern River Complex is above this recommended level.

The local area is estimated to retain approximately 45 per cent native vegetation cover, a large portion of which is contained within conservation areas. On this basis, the application area is not likely to be located within an area that has been extensively cleared.

Noting the extent of development in the local area particularly in close proximity to the application area (refer to Figure 1), the condition of the vegetation within the application area, the presence of suitable habitat for a fauna species of conservation significance, and the presence of a CCW, the application area may be significant as a remnant of native vegetation in the context of surrounding development.

Given the above, while the application area may comprise a significant remnant, primarily due its wetland values, it is not considered to be within an area that has been extensively cleared. The proposed clearing is therefore not likely to be at variance to this Principle.

**Table 1: Vegetation extents**

	Pre-European (ha)	Current Extent (ha)	Remaining (%)	Current Extent in DBCA- managed Lands (%)	
<b>IBRA Bioregion</b>					
Swan Coastal Plain	1,501,221	578,432	38.5	38	
<b>Heddlie Vegetation Complex</b>					
Southern River Complex					
within Bioregion	58,781	10,828	18.4	935	1.6
Bassendean Complex – North					
within Bioregion	79,057	56,575	71.5	30,546	38.6

**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**

As discussed under Principle (a), the majority of the application area is mapped as CCW UFI 15065 'Bordeaux Lane' palusplain (seasonally waterlogged flat) of approximately 35.6 hectares in total area. This CCW palusplain extends to the north and south of Lot 4800 and which has been extensively cleared for residential development (Parks and Wildlife, 2017b). This CCW palusplain is adjacent to CCW UFI 14075 'Tattinger Grove' sumpland (seasonally inundated basin) of approximately 2.25 hectares in total area, and to CCW UFI 15066 'Bordeaux Lane' palusplain of approximately 10.1 hectares in total area (refer to Figure 3).

The site inspection undertaken in May found that there was surface water present on Lot 4800 adjacent to the application area (DER, 2017). The 2017 flora and vegetation survey undertaken in September found that the application area was inundated (Bennett, 2017).

According to available databases, several other wetlands are mapped within the local area, including the following, within one kilometre of the application area:

- 'resource enhancement' wetland (REW) UFI 9179 'Bordeaux Lane' palusplain located approximately 320 metres from the application area;
- 'multiple use' wetland (MUW) palusplain located approximately 590 metres from the application area;
- MUW UFIs 15138, 15788, 15790 and 15791 'The Vines Country Club' sumpland located approximately 620 metres from the application area;
- CCW UFI 8939 palusplain approximately 760 metres from the application area;
- CCW UFI 8794 dampland located approximately 850 metres from the application area;
- REW UFI 14074 sumpland located approximately 850 metres from the application area; and
- CCW UFI 8943 dampland located approximately 870 metres from the application area.

CCWs support a high level of ecological attributes and functions and are the highest priority for preservation, and buffers are designed to protect wetlands from potential impacts while helping to maintain ecological processes and functions within the wetland (Water and Rivers Commission, 2001).

Parks and Wildlife advised that the CCW palusplain within which the majority of the application area is located is identified in the Mueha consanguineous suite (natural wetland group), and that approximately 13.5 per cent of this palusplain area retains values consistent with CCW criteria (Parks and Wildlife, 2017b). Parks and Wildlife advised that in consideration of the extensive development within this CCW palusplain, the application area is likely to retain representative values (Parks and Wildlife, 2017b). Parks and Wildlife also advised that the remnant wetland vegetation within Lot 4800 is likely to be hydrologically and ecologically connected to the wetland vegetation located directly south, and recommended that the cumulative impact of development within The Vines is considered given the majority of this palusplain has been developed in the last 10 years (Parks and Wildlife, 2017b).

The 2017 flora and vegetation survey report suggests that the three areas of wetland vegetation within Lot 4800 should be evaluated as 'resource enhancement' (Bennett, 2017). On review of the 2017 flora and vegetation survey report, DBCA advised that no justification for the evaluation has been provided and it does not appear the evaluation criteria in the draft Parks and Wildlife (2013) *A methodology for the evaluation of specific wetland types on the Swan Coastal Plain, Western Australia* has been applied (DBCA, 2017b). DBCA advised that correct application of the Parks and Wildlife methodology would also require the three areas of wetland vegetation within Lot 4800 to be evaluated as one unit, as the wetland area within Lot 4800 meets criterion 5 in the preliminary evaluation criteria of the Parks and Wildlife methodology (i.e equal to or greater than 90 per cent of the wetland supports vegetation in a 'Good' (Keighery, 1994) or better condition) and would therefore automatically be assigned as 'conservation' category (DBCA, 2017b).

DBCA advised that the observed level of inundation (up to 50 centimetres) as indicated in the 2017 flora and vegetation survey report is not generally expected in palusplain wetlands for any extended length of time, however, urbanisation commonly results in a hydrological change with wetland water levels often increasing (DBCA, 2017b). DBCA also advised that the addition of fill surrounding a wetland changes surface hydrology and in the instance of Lot 4800, has resulted in the creation of a basin where water appears to be accumulating (DBCA, 2017b). DBCA noted that while an increase in wetland water levels may not necessarily be a significant issue for some wetland flora species, increased depth and duration of inundation may result in degradation and death of some vegetation and could impact the capacity for natural regeneration of some species (DBCA, 2017b). DBCA reiterated the recommendation in previous advice that the cumulative impact of development within The Vines be considered (DBCA, 2017b).

DBCA also advised that there is a degree of presumption that areas evaluated as CCW will be protected in planning, as outlined in EPA Guidance Statement No.33 (EPA, 2008) (DBCA, 2018).

Given the above, the proposed clearing will result in the direct loss of vegetation growing in, and in association with, a CCW. The proposed clearing is at variance to Principle.

The CCW is question through a previous Negotiated Planning Solutions would result in this area being lost through development. This action resulted in over 27 hectares of land with significant environmental values transferred to the crown and reserved for conservation to enable the surrounding urban development. The Delegated Officer therefore considers that no further Offset is required for the proposed clearing.

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

#### **Proposed clearing may be at variance to this Principle**

As outlined in Section 2, the application area is mapped as the Bassendean, Jandakot Phase system, described as grey sand over pale yellow sands generally underlain by humic and iron podzols (Schoknecht et al., 2004). This system is typically associated *Banksia* spp. low open woodland with a dense shrub layer (Schoknecht et al., 2004). The site inspection identified that the vegetation within the application area does not comprise a *Banksia* spp. low open woodland with a dense shrub layer (DER, 2017).

The Bassendean, Joel Phase system is mapped approximately 80 metres south of the application area. This system is described as poorly drained depressions with humus podzols, and is typically associated with scattered *Melaleuca preissiana*, *Eucalyptus rudis* and *Banksia ilicifolia* (holly-leaved banksia) with a dense shrub layer (Schoknecht et al., 2004). Noting the soils and vegetation types observed during the site inspection (DER, 2017), the application area appears to be more aligned with this system than the mapped system.

The Bassendean, Joel Phase system has been mapped within the land degradation risk categories outlined in Table 2. As indicated in Table 2, greater than 70 per cent of the map unit has a moderate to very high waterlogging risk and a high to extreme phosphorus export risk, and 50-70 per cent of the map unit has a high to extreme water erosion risk and a moderate to high flood risk.

The presence of surface water in autumn suggests that the application area is poorly drained, and that the proposed clearing may increase the risk of waterlogging and phosphorus export. Noting the size, shape and relatively flat topography of the application area, the proposed clearing is unlikely to result in water erosion, or contribute to an increase in flooding.

On the basis of the information in Table 2, the proposed clearing also has the potential to contribute to changes in salinity, however noting the extent of the proposed clearing this impact is expected to be minimal.

Given the above, the proposed clearing may cause appreciable land degradation in the form of increased waterlogging and phosphorus export, and may be at variance to this Principle.

**Table 2: Land degradation risk categories (Schoknecht et al., 2004)**

Risk categories	Bassendean, Joel Phase system
Wind erosion	10-30% of map unit has a high to extreme wind erosion risk
Water erosion	50-70% of map unit has a high to extreme water erosion risk
Salinity	30-50% of map unit has a moderate to high salinity risk or is presently saline
Flood risk	50-70% of the map unit has a moderate to high flood risk
Water logging	>70% of map unit has a moderate to very high waterlogging risk
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 is not likely to be at variance to this Principle**

According to available databases, the local area contains a number of conservation areas:

- public open space retained as native vegetation is located approximately 40 metres south of the application area, and includes a CCW and is mapped as the Banksia Woodlands TEC;
- public open space retaining patches of native vegetation is located approximately 95 metres west of the application area;
- un-named Nature Reserve (R 49300) / Bush Forever Site 23 is located approximately 340 metres east of the application area, and includes a CCW and is mapped as the Banksia Woodlands TEC;
- Bush Forever Site 22 is located approximately 760 metres from the application area, and includes a CCW and is mapped as the Banksia Woodlands TEC;
- un-named Nature Reserves (R 46875 and R46919) / Bush Forever Site 300 is located approximately 850 metres from the application area, and includes CCWs and is mapped as the Banksia Woodlands TEC;
- privately-managed conservation areas are located approximately one kilometre, 1.2 kilometres and 1.7 kilometres from the application area;
- Bush Forever Site 399 is located approximately 2.9 kilometres from the application area, and is mapped as the Banksia Woodlands TEC; and
- Bush Forever Site 13 is located approximately 3.3 kilometres from the application area, and includes a CCW.

The above conservation areas are separated from the application area by residential development and roads.

Given the above, the proposed clearing is not likely to have an impact on the environmental values of nearby conservation areas. 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 may be at variance to this Principle**

As discussed under Principle (f), several wetlands have been recorded within the local area, including a CCW palusplain within the application area. The site inspection undertaken in May found that there was surface water present outside of the application area, and that the application area contains vegetation consistent with riparian habitats (DER, 2017). The 2017 flora and vegetation survey undertaken in September found that the application area was inundated (Bennett, 2017).

As discussed under Principle (g), the proposed clearing may cause appreciable land degradation in the forms of increased waterlogging and nutrient export. These impacts may affect the quality of surface water within and draining out of the application area, and may impact the hydrological function and environmental values of the CCW located south of the application area. In response, the applicant is of the view that the site comprised of remnant vegetation prior to the site being partially cleared in 2003, 2006 and 2007 (Coterra Environmental, 2019). Through regional scale mapping it is indicated that the groundwater flow direction is easterly and as such this does not indicate there is a groundwater flow between Lot 4800 and the wetland south of the site. Additionally, Mosely Drive is elevated between Lot 4800 and the wetland in the south and as such prevents any surface water flow (Coterra Environmental, 2019).

On review of this information it is acknowledged that there is unlikely to be a connection of surface water flow between Lot 4800 and the wetland south due to the development around these areas. However, as indicated within the DER's site inspection and the 2017 flora and vegetation survey report, Lot 4800 was inundated with water which would suggest that there is a direct relation between groundwater and surface water within Lot 4800. It is also acknowledged that the contour lines indicate that the groundwater flow is in an easterly direction. However, as shown under Figure 3 the wetland within Lot 4800 and the one south of Lot 4800 were once part of a consanguineous suite wetland system and was connected before development. The disturbance and

the creation of urbanisation commonly results in hydrological changes (DBCA, 2017b) and the previous groundwater flow direction in an easterly direction may no longer exist due to the large amount of elevation to the local areas through such development. DWER's assessment remains of the view that there is a possible hydrological connection between the wetland within Lot 4800 and wetland to the south of this area. Detailed hydrological investigations would be necessary to determine to what extent.

Groundwater salinity is mapped between 500-1,000 total dissolved solids (milligrams per litres). Noting the extent of the proposed clearing, the proposed clearing is not likely to contribute to an increase in groundwater salinity or cause deterioration in groundwater quality.

Given the above, the proposed clearing may cause deterioration in the quality of surface water as a result of waterlogging and nutrient export. The proposed clearing may be at variance to this Principle. Noting the fragmented nature of the clearing area, the small amount of clearing and the historical disturbance to the area, it is considered unlikely the proposed clearing will have a significant impact on the quality of surface or underground water.

**(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 discussed under Principle (g), 50-70 per cent of the Bassendean, Joel Phase system map unit has a moderate to high flood risk (Schoknecht et al., 2004). Noting the size, shape and relatively flat topography of the application area, and the extent of development in the surrounding area, the proposed clearing is unlikely to contribute to an increase in flooding.

Given the above, the proposed clearing is not likely to cause, or exacerbate, the incidence or intensity of flooding. The proposed clearing is not likely to be at variance to this Principle.

**Planning instruments and other relevant matters.**

The application was originally to clear 1.58 hectares of native vegetation within Lot 4800 for the purposes of preliminary works for school construction and bushfire hazard reduction. Supporting information states "*The timing of the vegetation clearing works onsite has been brought forward due to concerns raised by neighbouring residents and the City of Swan in relation to bushfire hazard and risk to surrounding properties*".

The original application was advertised in *The West Australian* newspaper on 18 April 2017 for a 21-day submission period. No public submissions have been received in relation to this application.

No Aboriginal sites of significance are mapped within Lot 4800.

The applicant amended the application area during the assessment to exclude 0.85 hectares of native vegetation within the northern portion of the original application area (indicated by the area shaded green in Figure 2), in accordance with the City of Swan's development approval for the clearing of 0.73 hectares of native vegetation.

**State planning context**

The Perth Metropolitan Region Scheme Map Sheet 8 shows Lot 4800 to be zoned 'Urban'.

The Western Australian Planning Commission's (WAPC) Policy No. DC 2.4 School Sites states that the Education Department has adopted, as part of a general guide to the desirable size for each type of school, four hectares for a primary school. Lot 4800 is approximately four hectares in area.

**Local planning context**

The City of Swan Local Planning Scheme No 17 Map 20 shows Lot 4800 to be within a 'Special Use' zone. It is noted that the broader area which contains Lot 4800 (formerly Part Lot 3 / draft Bushplan site 23) was the subject of a negotiated planning solution in 1999, which resulted in the subdivision of Part Lot 3 and the transfer of a 27 hectare portion to the State for inclusion in the Bush Forever estate. The remaining portion was subsequently rezoned 'Urban' and further subdivided.

Lot 4800 is identified for the purpose of a 'Primary School' in the City's approved Outline Development Plan No.37 for The Vines Stage 5 (Woburn Park), which was adopted by the City in 2005 and has had a number of modifications (City of Swan, 2016). As part of the City's initial endorsement of Outline Development Plan No.37 in 2005, the plan identifying the land as a future school was referred to the former Department of Environment (DoE) and the Environmental Protection Authority (EPA) for comment (City of Swan, 2016). Both DoE and the EPA accepted the plan on the basis that a significant portion of the wetland would be retained within the public open space to the south of Lot 4800 (City of Swan, 2016).

On 11 May 2017, DWER received advice from the City stating that it was assessing a development application under its Local Planning Scheme No.17 to clear approximately 1.6 hectares of vegetation on Lot 4800 (City of Swan, 2017a). The City noted that the applicant had advised that the proposed clearing is to prepare Lot 4800 for future development as a private school, as identified in Outline Development Plan No.37 for the area (City of Swan, 2017a). The City advised that in considering the development application, it will have due regard to a number of matters, including the following:

- the likely effect of the development on the natural environment and any means that are proposed to protect or to mitigate impacts on the natural environment;
- whether any trees or other vegetation on the land should be preserved;
- the suitability of the land for the development taking into account the possible risk of soil erosion, land degradation or any other risk; and

- the amenity of the locality, including environmental impacts of the development and the character of the locality (City of Swan, 2017a).

The City advised that it has not yet received a development application for the school, and it is unknown when a development application will be received or how it will be determined (City of Swan, 2017a). The City also advised that while it is to have due regard to Outline Development Plan No.37, which identifies the subject land as being for a school, it is not bound by it when deciding a development application (City of Swan, 2017a). The City advised that the uncertainty around the progress and likely outcome for planning of a school on Lot 4800 raises questions around whether the proposed clearing is premature and/or unwarranted at this time, and as to the state of the land indefinitely if the proposed clearing is approved at this time (City of Swan, 2017a).

The City's Bushfire Hazard Context Plan (dated 21 September 2017) indicates that the whole of the southern portion and approximately one-thirds of the central portion of the application area are within 100 metres of native vegetation within the adjacent public open space, and that the whole of the northern portion of the application area is less than one hectare in size and (if the whole of the central portion is cleared) is located more than 100 metres from other native vegetation (City of Swan, 2018).

At its meeting on 18 October 2017, the City's Council resolved to refuse to grant development approval on the basis that the risk of bushfire associated with the vegetation was not so great as to warrant the loss of visual amenity that would result from the clearing of vegetation, and that the clearing of vegetation ahead of development on the lot would make the land susceptible to increased windblown sand that has the potential to cause nuisance and adversely affect the amenity of surrounding properties (City of Swan, 2017b).

The applicant appealed to the State Administrative Tribunal (SAT) that the application for development approval be reviewed, and provided revisions to the development application for consideration (City of Swan, 2018). The SAT invited the City's Council to reconsider its decision pursuant to section 31 of the *State Administrative Tribunal Act 2004* (City of Swan, 2018).

In reconsidering the City's Council's decision in the context of the applicant's proposed revisions to the development application, the City took into account the following:

- in relation to bushfire risk, the City considered that the vegetation as a whole is approximately 1.58 hectares and is classified as a 'moderate' bushfire hazard under State Planning Policy 3.7 - Planning in Bushfire Prone Areas (SPP3.7), that the hazard level may be reduced to 'low' if the vegetation is cleared to a single area less than one hectare and separated by 100 metres from other vegetation, and that the proposed clearing of the central and southern portions of vegetation on Lot 4800 is acceptable to reduce the bushfire hazard level on the lot to 'low' because these portions are within 100 metres of vegetation within the adjacent public open space, and its location means that retained vegetation would impede future development of buildings and playing fields on the school site inconsistent with the intent of Outline Development Plan No.37;
- in relation to the impact on visual amenity, the City considered that the retention of 0.85 hectares of vegetation along the Ackworth Grange and Althrop Way street boundaries will preserve the visual amenity of the site as viewed from the street consistent with Objective (c) of the Residential zone to preserve the residential amenity of the area;
- in relation to the potential nuisance of windblown sand, the City considered that the retention of 0.85 hectares of vegetation along the Ackworth Grange and Althrop Way street boundaries will reduce the risk of soil destabilisation and resultant dust emissions, and that any development approval should be subject to a condition requiring the applicant to prepare and implement a dust management plan to ensure soil is stabilised to prevent erosion and dust blowing; and
- the City noted that the applicant also proposes to erect four pylon signs, one on each boundary of Lot 4800, to notify the public that a Catholic primary school is planned to be established on the site, in order to reflect that the land is identified as a future school in Outline Development Plan No.37 (City of Swan, 2018).

At its meeting on 14 February 2018, the City's Council resolved to grant development approval for the clearing of 0.73 hectares of native vegetation on Lot 4800, subject to a number of conditions including (among others) that 0.85 hectares of vegetation along the Ackworth Grange and Althrop Way street boundaries is retained (City of Swan, 2018).

The development approval (DA-225/2017) was granted by the City on 19 February 2018 for the stated purpose 'Clearing of Vegetation on Lot 4800 Moselsey Drive, The Vines', subject to conditions which include (among others):

- clearing in accordance with the approved plan, which requires the retention of 0.85 hectares of vegetation along the Ackworth Grange and Althrop Way street boundaries;
- the cleared areas shall be maintained in a low fuel state to the satisfaction of the City;
- rectification of any obstruction, alteration or interference with the natural flow of surface water caused by the approved works;
- prior to commencing the approved works, preparation of a Dust Management Plan and a Landscaping Plan for approval by the City, and subsequent implementation;
- prior to commencing the approved works, undertaking of a fauna survey and relocation of identified fauna to the satisfaction of the City; and
- further approval to be obtained from the City for any additional development on Lot 4800.

The Delegated Officer noted that the development approval has reduced the area available for development on Lot 4800 to 3.15 hectares, less than the minimum area for a primary school identified in WAPC Policy No. DC 2.4. The applicant has been advised that the construction of two story buildings reduces the minimum school size and would then allow the school to still function on a reduced site (Coterra Environmental, 2019).

Having considered the above, the Delegated Officer formed the view that the proposed clearing for the stated purpose of 'preliminary works for school construction' is consistent within the approved City of Swan Outline Development Plan 37 and in accordance with development plan issued by the City of Swan on the 19 February 2018. Regarding the other stated purpose of the clearing permit application, being 'bushfire hazard reduction', the Delegated Officer noted the findings of the City's Council that Lot 4800 is currently classified as a 'moderate' bushfire hazard under State Planning Policy 3.7 - Planning in Bushfire Prone Areas,

and that the bushfire risk associated with a single area less than one hectare separated by 100 metres from other vegetation can be reduced to 'low' bushfire hazard under Policy 3.7.

### **Impacts associated with proposed development**

As discussed under Principle (f), Parks and Wildlife / DBCA advised that the remnant wetland vegetation within Lot 4800 is likely to be hydrologically and ecologically connected to the wetland vegetation located directly south, and recommended that the cumulative impact of development within The Vines is considered as part of this assessment, noting that the majority of this palusplain system has been developed in the last 10 years (Parks and Wildlife, 2017b; DBCA, 2017b).

The proposed construction and ongoing use of a school has the potential to result in impacts to hydrologically and ecologically connected wetlands in the vicinity, including the remnant vegetation located approximately 40 metres south of the application area, which may include or result from:

- groundwater abstraction during school construction;
- disturbance of acid sulphate soils during school construction;
- changes in hydrology (e.g. compaction, creating an impediment to surface water flows, changes in volume of surface water runoff);
- management of pollution (e.g. herbicides/nutrients) in surface water runoff;
- disruption of ecosystem processes (e.g. fauna mortalities);
- changes in social and aesthetic amenity (e.g. as considered by local residents); and
- potential for introduction of additional pressures (e.g. increased risk of fire, uncontrolled access, rubbish dumping, weeds).

Detailed hydrological investigations would be necessary to determine the extent of these impacts. As these impacts are associated with the potential end land use for the site, they are not within the scope of the assessment of the current clearing permit application.

## **5. Applicant's submission**

On 1 September 2017, a DWER Delegated Officer wrote to the applicant, outlining the environmental impacts identified during the assessment of the application, and inviting the applicant to provide additional advice addressing these matters, including information on how the applicant intends to avoid or minimise the impacts identified, and offset any significant residual impacts (DWER ref. A1515420).

DWER officers met with the applicant's representatives on 10 October 2017 to discuss the matters raised in the Delegated Officer's letter. During the meeting, the applicant's representatives provided a flora and vegetation survey conducted in September 2017 (DWER ref. A1670570). The applicant's representatives also provided a detailed planning background relating to the creation and zoning of Lot 4800.

DWER officers again met with the applicant's representatives on 27 February 2018 to discuss the application. During the meeting, the applicant's representatives provided a map of a revised application area consistent with development approval granted by the City of Swan for the clearing of 0.73 hectares of native vegetation on Lot 4800 (refer to Figure 3) (DWER ref. A1637209 and A1637210).

The applicant's additional information was considered in the context of this assessment. It is considered that the proposed clearing in the revised application area will directly impact on native vegetation growing in association with a 'conservation category' wetland, may impact on vegetation with a high level of biodiversity in the context of surrounding development, may impact on habitat for a priority fauna species, and may result in land degradation leading to deterioration in the quality of surface water. It is also considered that the proposed clearing and subsequent land uses are likely to impact on the hydrological and ecological values of a CCW in close proximity to the application area.

On the 29 June 2018, the applicant requested additional time to provide advice on this application. This extension was granted until the 29 August 2018.

On the 20 September 2018, a meeting was had with representatives of the applicant to discuss the matters further. The outcome of the meeting resulted in a further extension given to provide a response

On the 14 December 2018, the applicant requested additional time to provide advice on this application. This extension was granted until 31 January 2019. A reminder was sent to the applicant on 30 January 2019 advising that no further information had been provided and DWER officers attempted to contact the applicant on 31 January 2019 to discuss the expiry of this extension to comment.

On 1 February 2019, the applicant requested additional time to provide advice on this application. This extension was granted until 6 February 2019. On the 7 February 2019, the Delegated Officer then agreed to one final extension of time until 7 March 2019.

On the 4 July 2019, the applicant's representative provided additional information regarding the concerns raised during DWER's correspondence dated 1 June 2018. The additional information provided was in relation to principles (a), (b), (f), (g) and (i). This information has been included, where appropriate, in the above assessment report. The response also provided further evidence in relation to the historical planning associated with the subject site. This has been discussed further under Planning instruments and other relevant matters.

In reviewing the additional information, the Delegated Officer has remained of the view the variance levels against the clearing principles has been assessed in accordance with the *Guide to the Assessment of Application to Clear Native Vegetation under Part V of the Environmental Protection Act 1986* (December 2014) and remains of the opinion that the proposed clearing is at variance to principle (f) and may be at variance to principles (a), (b), (g) and (i). In determining the application, the Delegated

Officer has taken into consideration the planning history of the site and the grant development approval for the clearing of 0.73 hectares issued by the City of Swan. As indicated in the above assessment, the proposed clearing will have significant residual impacts to a CCW, however the Delegated Officer is satisfied that Offsets have already been provided through the previous Negotiated Planning Solutions, which resulted in over 27 hectares of land with significant environmental values transferred to the crown and reserved for conservation to enable the surrounding urban development.

## 6. References

- Bennett, E. (2017) Vegetation and Flora of Lot 4800 Moseley Drive, The Vines. Prepared for Coterra Environment, dated September 2017 (DWER ref. A1670570).
- City of Swan (2016) Minutes of the Ordinary Meeting of Council held on 28 September 2016. Available from: [www.swan.wa.gov.au](http://www.swan.wa.gov.au).
- City of Swan (2017a) Advice received in relation Clearing Permit Application CPS 7538/1 – Roman Catholic Archbishop of Perth (DWER ref. A1428856).
- City of Swan (2017b) Minutes of the Ordinary Meeting of Council held on 18 October 2017. Available from: [www.swan.wa.gov.au](http://www.swan.wa.gov.au).
- City of Swan (2018) Minutes of the Ordinary Meeting of Council held on 14 February 2018. Available from: [www.swan.wa.gov.au](http://www.swan.wa.gov.au).
- Commonwealth of Australia (2001) National Objectives and Targets for Biodiversity Conservation 2001-2005, Canberra.
- Coterra Environmental (2019) Additional information provided in relation to Clearing Permit Application CPS 7538/1 (DWER Ref:A1812631).
- Coterra Environmental (2017) DER Clearing Application Technical Report Lot 4800 Moseley Drive, The Vines Revision 0, March 2017 (DWER Ref:A1515937).
- Department of Biodiversity, Conservation and Attractions (DBCA) (2007-) NatureMap: Mapping Western Australia's Biodiversity. Department of Biodiversity, Conservation and Attractions. URL: <http://naturemap.dpaw.wa.gov.au/> (Accessed July 2017).
- Department of Biodiversity, Conservation and Attractions (DBCA) (2017a) Additional flora and threatened ecological community advice for Clearing Permit Application CPS 7538/1. Department of Biodiversity, Conservation and Attractions, Western Australia (DWER ref. A1624981).
- Department of Biodiversity, Conservation and Attractions (DBCA) (2017b) Additional wetlands advice for Clearing Permit Application CPS 7538/1. Department of Biodiversity, Conservation and Attractions, Western Australia (DWER ref. A1624984).
- Department of Biodiversity, Conservation and Attractions (DBCA) (2018) Further additional wetlands advice for Clearing Permit Application CPS 7538/1. Department of Biodiversity, Conservation and Attractions, Western Australia (DWER ref. A1625249).
- Department of Environment and Conservation (DEC) (2012) Fauna profiles, Quenda, *Isoodon obesulus*. Department of Environment and Conservation, Western Australia.
- Department of Environment Regulation (DER) (2017) Site Inspection Report for Clearing Permit Application CPS 7538/1, Roman Catholic Archbishop of Perth. Site inspection undertaken 22 May 2017. Department of Environment Regulation, Western Australia (DWER ref. A1462624).
- Department of Parks and Wildlife (Parks and Wildlife) (2017a) Flora advice for Clearing Permit Application CPS 7538/1. Department of Parks and Wildlife, Western Australia (DWER ref. A1462634).
- Department of Parks and Wildlife (Parks and Wildlife) (2017b) Wetlands advice for Clearing Permit Application CPS 7538/1. Department of Parks and Wildlife, Western Australia (DWER ref. A1462628).
- Department of Parks and Wildlife (Parks and Wildlife) (2017c) Threatened ecological community advice for Clearing Permit Application CPS 7538/1. Department of Parks and Wildlife, Western Australia (DWER ref. A1462628).
- Environmental Protection Authority (EPA) (2008) Environmental Guidance for Planning and Development. Guidance Statement No. 33. Environmental Protection Authority. Western Australia.
- Government of Western Australia. (2018) 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>
- Government of Western Australia. (2018) 2017 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report). Current as of December 2017. WA Department of Biodiversity, Conservation and Attractions.
- Hedde, E.M., Loneragan, O.W., and Havel, J.J. (1980) Vegetation Complexes of the Darling System, Western Australia. In Department of Conservation and Environment, Atlas of Natural Resources, Darling System, 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.
- Jones, A. (2015) Threatened and Priority Flora List, 11 November 2015. Department of Parks and Wildlife: Kensington, WA.
- Schoknecht, N., Tille, P. and Purdie, B. (2004) Soil-landscape mapping in South-Western Australia – Overview of Methodology and outputs' Resource Management Technical Report No. 280. Department of Agriculture.
- Western Australian Herbarium (1998- ) FloraBase - The Western Australian Flora. Department of Parks and Wildlife. <http://florabase.dpaw.wa.gov.au/> (Accessed July 2019).
- Water and Rivers Commission (2001) Position Statement: Wetlands, Water and Rivers Commission, Perth.
- Weston, A. (1999) Vegetation and significant flora of Bushplan Site 23 (Muehea Limestone) The Vines. Report prepared for Bowman Bishaw Gorham, dated June 1999 (DWER ref. A1404714).

### GIS Databases:

- Aboriginal Sites of Significance
- Acid Sulfate Soil Risk Map, Swan Coastal Plain
- DBCA Managed Estate
- Directory of Important Wetlands
- Groundwater salinity, Statewide
- Hydrography, hierarchy
- Hydrography, linear
- Land Degradation datasets
- NLWRA, Current Extent of Native Vegetation
- SAC Bio Datasets
- Soils, Statewide



- Topographic contours
- Vegetation Complexes SCP
- Wetlands, Swan Coastal Plain