CPS 9723/1 - Supporting information - Assessment against 10 clearing principles

Assessment Against the Ten Clearing Principles - Stage 2 pipeline

Principle		Assessment	Outcome
A	Native vegetation should not be cleared if it comprises a high level of biological diversity.	The NVCP application area includes 7.14ha of native vegetation as described in the Flora and Vegetation Survey report (GHD, 2021c), consisting of six vegetation units, of which approximately 13.8% is in Very Good to Good condition (Attachment 5). The remainder of the NVCP application is mapped as P (roads and tracks, cleared road verges (sometimes with planted trees) and pasture and parkland with scattered trees, including areas with no vegetation) – 5.48 ha (77%) in Completely Degraded condition. Vegetation types identified within the NVCP application area, excluding HDD areas where no clearing is required, include (Figure 4, Attachment 1): B – *Eucalyptus gomphocephala* (*Eucalyptus marginata*) Tall Woodland over *Agonis flexuosa* Low Open-forest – 0.23 ha (Good to Degraded condition) C1 – *Eucalyptus marginata*, *Banksia attenuata*, *Xylomelum occidentale* Woodland over *Kunzea glabrescens* Tall Shrubland – 0.89 ha (Very Good to Completely Degraded condition) C2 – *Corymbia calophylla* Open Forest over *Kunzea glabrescens* Tall Shrubland – 0.11 ha (Very Good to Completely Degraded condition) C3 – *Corymbia calophylla*, *Eucalyptus marginata* Open Forest over *Agonis flexuosa*, *Banksia attenuata* – 0.15 ha (Degraded condition) D1 – *Eucalyptus rudis Tall Woodland over Agonis flexuosa, Melaleuca rhaphiophylla* Low Open-forest/Woodland – 0.05 (Degraded condition) D2 – *Corymbia calophylla, Melaleuca preissiana, M. rhaphiophylla (Agonis flexuosa, Eucalyptus rudis)* Open Forest/Woodland – 0.11 ha (Degraded condition) A total of 294 flora taxa (including subspecies and varieties) representing 67 families were recorded from the entirety of the Proposal survey area. This total comprised 229 native taxa and 65 introduced flora taxa (GHD, 2021c). A desktop study (within 10 km of the survey area) returned a total of 202 vertebrate fauna species as having been recorded previously within the local area, consisting of 153 bird, 17 mammals, 22 reptile and 10 frog species. Of these, 190 are native and 12 are introduced (Biota Environmental Services, 2021).The 10 km radius used for the desktop assessment of the fauna assemblage encompasses habitat types, such as marine and freshwater habitats, that did not occur with the survey area. Therefore, specialist species, such as shorebirds and marine species, restricted to these habitat types are considered unlikely to occur within the NVCP application area. The NVCP application area comprises 7.14 ha (approximately 11%) of the total 63.97 ha covered by the field surveys, which were undertaken to compile the species diversity statistics provided above. It is expected that only a portion of the total biological diversity described above will occur in the NVCP application area. Given the presence of significant areas of intact native vegetation to the north and west, it is considered that the NVCP application area is not likely to comprise a greater diversity than similar areas, either locally or at a bioregional scale. The proposed clearing is considered not likely to be at variance to this Principle.	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	The NVCP application area includes four habitat types as described in the Fauna Assessment report (Biota Environmental Services, 2021) (Attachment 6). The habitat types include (Figure 5, Attachment 1): – Tuart/ Peppermint Woodland (0.39 ha) – Mixed Marri/ Eucalyptus Woodland (0.87 ha) – Melaleuca Shrubland and/ or Woodland (0.16 ha) – Marri/ Eucalyptus in Paddocks and Road Reserves (0.24 ha)	The proposed clearing may be at variance to this principle

Principle	Assessment	Outcome
maintenance of, a significant habitat for fauna indigenous to Western Australia.	An area of 4.72ha is mapped as 'Cleared' within the NVCP application area which corresponds to cleared road reserves, tracks and agriculture and is of Completely Degraded condition. Since the fauna survey was completed changes to the Stage two pipeline alignment, to avoid clearing of native vegetation such as Clay Pans TEC, has resulted in a 0.76 ha survey gap in the fauna survey compared with the NVCP application area. Desktop assessment of aerial photography indicates that the survey gaps are predominantly located in previously cleared areas with low habitat value. A desktop study (with 10 km of the survey area) returned a total of 202 vertebrate fauna species as having been recorded previously within the local area, consisting of 153 bird, 17 mammals, 22 reptile and 10 frog species. Of these, 190 are native and 12 are introduced (Biota Environmental Services, 2021). The likelihood of occurrence assessment undertaken by Biota Environmental Services (2021) concluded that of the 37 conservation significant fauna (threatened and priority listed species) identified in the desktop assessment, 22 may or are likely to occur and four species were identified within the broader survey area. Based on the habitat types identified within the NVCP application area it is considered that seven conservation significant fauna species are known/ may occur or are considered likely to occur, based on habitat availability and previous records in the local area: Known or likely to occur: – Carnaby's Cockatoo (Calyptorhynchus latirostris) (EN) – Forest Red-tailed Black Cockatoo (Calyptorhynchus banksii subsp. naso) (VU) – Baudin's Cockatoo (Calyptorhynchus baudinii) (EN) – Western Ringtail Possum (Pseudocheirus occidentalis) (CR) – Southern Brown Bandicoot, Quenda (Isoodon fusciventer) (DBCA Priority 4) – Wambenger Brush-tailed Phascogale (Phascogale tapoatafa wambenger) (BC Act Conservation Dependent Fauna) May occur: – Blue-billed Duck (*Oxyura australis*) (DBCA Priority 4) – occasional visitor to artificial and ephemeral habitats – Coastal Plains Skink (*Ctenotus ora*) (DBCA Priority 3) – Peregrine Falcon (*Falco peregrinus*) (BC Act Other specially protected fauna) – foraging visitor – Swan Coastal Plain shield-backed trapdoor spider (*Idiosoma sigillatum*) (DBCA Priority 3) – Western Brush Wallaby (*Notamacropus irma*) (DBCA Priority 4) –visitor Clearing of native vegetation may impact the following conservation significant fauna habitat within the NVCP application area. As per the classification system described in the fauna assessment report (Biota Environmental Services, 2021), habitat suitability was classified as either: **Core -** Habitat critical to the survival of the species. **Secondary -** Habitat which may be used on a transitory, dispersing or occasional basis, but does not represent core habitat. **Not Habitat** - Habitat unlikely to be used by species. Potential clearing of habitat was assessed for species known or likely to occur as including up to:	

Principle	Assessment	Outcome
	– 1.31 ha suitable habitat for Carnaby's Cockatoo, Forest Red-tailed Black Cockatoo and Baudin's Cockatoo • 1.09 ha high quality foraging/ potential roosting – Tuart/ Peppermint Woodland and Mixed Marri/ Eucalyptus Woodland • 0.22 ha moderate quality foraging – Marri/ Eucalyptus in Paddocks and Road Reserves • 18 potential breeding trees (suitable species > 500 mm DBH, none with hollows suitable for breeding) – 1.31 ha suitable habitat for Western Ringtail Possum • 1.09 ha Core Habitat – Tuart/ Peppermint Woodland and Mixed Marri/ Eucalyptus Woodland • 0.22 ha Supporting Habitat – Marri/ Eucalyptus in Paddocks and Road Reserves – 0.16 ha suitable habitat for Quenda – Melaleuca Shrubland and/ or Woodland – 1.09 ha suitable habitat for Brush-tailed Phascogale – Tuart/ Peppermint Woodland and Mixed Marri/ Eucalyptus Woodland Species known or considered likely to occur are discussed in detail below: **Black Cockatoos (Carnaby's Cockatoo, Forest Red-tailed Black Cockatoo and Baudin's Cockatoo)** Construction of the Stage 2 pipeline involves clearing of up to 1.31 ha suitable Black Cockatoo species habitat, including 1.09 ha of high-quality foraging/ potential suitable roosting habitat and 0.22 ha of moderate quality foraging habitat. No known Black Cockatoo nesting hollows were recorded within the NVCP application area during the fauna assessment undertaken by Biota Environmental Services (2021). Loss of up to 18 potential breeding trees (suitable species > 500 mm DBH, none with hollows suitable for breeding) is likely to result in minor residual impact to Black Cockatoo species (Figure 5, Attachment 1). Assessment of the potential impacts on Black Cockatoo habitat using vegetation complexes within a 12 km radius indicated that the vegetation complexes which provided the highest quality foraging habitat (eg Bassendean Central and South and the Southern River vegetation complexes) were in general well represented outside of the survey area (Biota, 2021). Occurrence of the Swan Coastal Plain vegetation complexes within the survey area and vegetation fragments within a 12 km radius include the following: – Karrakatta Complex – Central and South – 2,262.9 ha – Southern River Complex – 1,999.2 ha – Yoongarillup Complex – 291.8 ha. Clearing of 1.31 ha of potential habitat represents a 0.03 % reduction in potential foraging and breeding habitat for the Black Cockatoo species and therefore is considered unlikely to significantly fragment or reduce the occupancy of these species within the local area. **Western Ringtail Possum (WRP)** The Stage 2 pipeline alignment has been selected to minimise the impact to the environment and threatened species with 4.72ha of the 7.14ha total area, cleared or highly modified. Clearing of native vegetation within the remainder of the NVCP application area will result in the loss of up to 1.31 ha of WRP habitat, including 1.09 ha Core Habitat and 0.22 ha Supporting Habitat, and potential displacement of up to 6 individuals (Biota Environmental Services, 2021). A total of 91 individual (61 observations) Western Ringtail Possum were recorded during the first (October) round of sampling while fewer were recorded in February, with 69 individuals from 49 observations during the field survey (Biota Environmental Services, 2021). Of these 6 individuals were recorded within the NVCP application area (Figure 5, Attachment 1). Based on the results of Western Ringtail Possum Regional Surveys (Biota, 2020), the population of WRPs for the surveyed area of the Swan Coastal Plain management zone was estimated at 9,270 individuals. The potential displacement of up to 6 individuals therefore represents 0.06 % of the regional population. Based on the results of the regional population survey and the estimated maximum number of possums displaced	

Principle		Assessment	Outcome
		as a result of the proposed clearing, it is considered unlikely that the proposed clearing will result in a long-term decrease in the size of the WRP population, fragment or reduce the area of occupancy of this species. In addition to minimisation of clearing of native vegetation during the design process, potential for impact to WRP will be further minimised and mitigated through the following clearing and construction management controls: – Utilising staged directional clearing to direct displaced native fauna to surrounding vegetation – Machinery hygiene measures to prevent introduction of pathogens – Allowing areas of temporary clearing to return to previous condition or be revegetated – Applying relevant operation controls as required to prevent impact to surrounding fauna habitat. **Quenda** Melaleuca shrubland and/ or woodland habitat type, located within the NVCP application area, is considered to be potential habitat for Quenda. The habitat utilised by this species are widespread and well represented in the local area, therefore impact by the proposed clearing is not considered to be significant. **Brush-tailed Phascogale** The likelihood of occurrence assessment by Biota Environmental Services (2021) indicates that Tuart/ Peppermint Woodland and Mixed Marri/ Eucalyptus Woodland habitat types are considered suitable habitat for Brush-tailed Phascogale. The habitat utilised by this species is well represented in the local area to the north in Manea Park, therefore impact by the proposed clearing is not considered to be significant. **Conclusion** Due to the small extent of potential clearing, the suitability of habitats present, and habitat types impacted being widespread and well represented in the local area it is not considered likely that clearing will result in significant impacts to significant habitat for fauna. However, as the NVCP application area intersects up to 1.31 ha habitat for Black Cockatoo species and Western Ringtail Possum, applying a conservative approach it has been assessed that clearing may be at variance to this principle. As these species are listed under the EPBC Act, clearing required for construction of the Stage 2 pipeline has also been referred to Department of Agriculture, Water and Energy. Minor residual impacts to Black Cockatoo species and Western Ringtail Possum are proposed to be offset as per the Draft Offset Strategy (Attachment 4).	
C	Native vegetation should not be cleared if it includes, or is necessary for the continued	No Threatened flora species listed under the EPBC Act and/ or Biodiversity Conservation Act 2016 (BC Act) were recorded during the field survey (GHD, 2021c). The desktop assessment for the entire biological survey area identified a possible likelihood of occurrence for seven EPBC Act or BC Act listed (rare) flora (GHD, 2021c). The likelihood of occurrence based on habitat present and survey effort within the NVCP application area is discussed for each of these species below: ***Austrostipa bronwenae* EPBC Act – Endangered / BC Act – Endangered and *Austrostipa jacobsiana* EPBC Act – Critically Endangered / BC Act – Critically Endangered** The post survey likelihood for *Austrostipa bronwenae* and *Austrostipa jacobsiana* is assessed as unlikely to occur in the survey area when considering that suitable survey effort using transects covering all potential habitats were undertaken. Both species are associated with wetland	The proposed clearing is not likely to be at variance to this principle

Principle		Assessment	Outcome
	existence of, rare flora.	habitats however proposed clearing of wetland vegetation has been minimised during the design process and the remaining wetland vegetation within the NVCP application area is in Degraded condition (TSSC, 2017; TSSC, 2018). ***Caladenia huegelii* EPBC Act – Endangered / BC Act – Critically Endangered** *Caladenia huegelii* habitat consists of mixed woodlands of Jarrah, Marri and Banksia with a dense shrubby understorey occurring on grey-white sands, usually associated with the Bassendean sand dune system (DEC, 2009). The post survey likelihood for *Caladenia huegelii* is unlikely to occur in the NVCP application area when considering that suitable survey effort covering all potential habitats was undertaken during the preferred survey timing for species detection. ***Diuris drummondii (Tall Donkey orchid*). EPBC Act/ BC Act – Vulnerable** Suitable *Diuris drummondii* habitat, such as low-lying depressions or swamps (DEWHA, 2008a), were identified within the field survey however are in Degraded to Completely Degraded condition within the NVCP application area (GHD, 2021c). The post survey likelihood for occurrence concludes that this species is unlikely to occur in the NVCP application area when considering that suitable survey effort covering all potential habitats was undertaken during the preferred survey timing for species detection. ***Drakaea elastica.* EPBC Act – Endangered / BC Act – Critically Endangered and *Drakaea micrantha.* EPBC Act – Vulnerable / BC Act – Endangered** Suitable *Drakaea elastica* and *D. micrantha* habitat, such as winter wet swamps (DEWHA, 2008b), were identified during the field survey however are in Degraded to Completely Degraded condition within the NVCP application area (GHD, 2021c). The post survey likelihood for both *Drakaea elastica* and *D. micrantha* concludes that these species are unlikely to occur in the NVCP application area when considering that suitable survey effort covering all potential habitats was undertaken during the preferred survey timing for species detection. While the species may not flower each year, targeted surveys for the presence of the *Drakaea* leaf were undertaken. No individuals were identified during the targeted surveys (GHD, 2021c). ***Eleocharis keigheryi (Keighery's Eleocharis). EPBC Act/ BC Act – Vulnerable*** Suitable *Eleocharis keigheryi* habitat, such as claypans (DEWHA, 2008c), have been avoided during the design process and therefore are not located within the NVCP application area. The post survey likelihood for *Eleocharis keigheryi* is unlikely to occur in the survey area when considering that suitable survey effort covering all potential specific claypan habitats has been undertaken during the preferred survey timing for species detection (GHD, 2021c). **Conclusion** As the pipeline alignment has been designed to avoid wetland vegetation such as Clay Pans TEC and based on the likelihood of occurrence assessment, given the survey effort it is considered unlikely that the NVCP application area contains or comprises a habitat for rare flora species. 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 maintenanc	The GHD (2021c) field surveys identified six conservation significant ecological communities listed under the EPBC Act and/ or BC Act within the greater survey area. Some of these communities share an overlapping distribution and diagnostic criteria however are assigned differing conservation status. Of these communities, two Threatened Ecological Communities (TEC) were identified within the NVCP application area: – Banksia Woodlands of the Swan Coastal Plain (EPBC Act – Endangered TEC) – 0.89 ha – Tuart Woodland and forests of the Swan Coastal Plain (EPBC Act – Critically Endangered TEC) – 0.23 ha **Clay Pans of the Swan Coastal Plain TEC** GHD (2021c) vegetation sub-units E1 and E2 resemble both Gibson et al. (1994) Floristic Community Type (FCT) 09 and FCT 07, which are considered to form the Clay Pans of the Swan Coastal Plain TEC. These two sub-units occur on shallow sandy lenses over (or directly on the) heavy clay of the Pinjarra Plain at shallow depth. The occurrence of E1 and E2 have been severely degraded. A total of 2.03 ha clay pan	The proposed clearing may be at variance to this principle

Principle	Assessment	Outcome
e of a threatened ecological community.	vegetation units (E1 and E2) were mapped within the broader survey area, these were mainly in a Degraded condition with some areas of Very Good and Good condition. Dieback surveys completed by GSBL (2020) identified the Clay Pans TEC area as infested (Attachment 7). A site visit with DBCA was carried out in June 2021 to confirm the boundary of the clay pan community on Centenary Road and its condition (identified as Good – Degraded). This mapping was used to further refine the proposed alignment and construction footprint and determine alternative alignments as per the Pipeline Route Selection report (Attachment 8). The NVCP application area has been specifically modified to avoid and minimise the risk of impacts to the Clay Pans TEC vegetation. The alignment is within an existing cleared track and will not result in clearing or fragmentation of the community. **Tuart (*Eucalyptus gomphocephala*) Woodlands and Forests of the Swan Coastal Plain TEC** GHD (2021) vegetation sub-units A2, A3 and unit B were assessed against the Tuart TEC criteria and considered to be representative of the Tuart TEC. Aqwest has further refined the Proposed Action Area to reduce the extent of impact to the Tuart TEC, this includes using trenchless technologies to avoid clearing where possible, however some impacts are unavoidable. 0.23 ha of Tuart TEC, that forms part of GHD (2021) vegetation unit B: *Eucalyptus gomphocephala* with scattered *Eucalyptus marginata* Tall Woodland over *Agonis flexuosa* Low Open-forest in Good (0.19 ha) and Degraded (0.04 ha) will be directly impacted (cleared) within the NVCP application area. The area of Tuart within the NVCP application has existing disturbances with an old track present and introduced (grass and herb species) from the adjacent agricultural land. A dieback assessment (GSBL, 2020) mapped the area as uninfested. The proposed clearing would require the clearing of 0.23 ha of Tuart TEC. The DoEE (2019) identifies the regional extent of the Tuart Woodlands TEC being > 17,000 ha. The loss of 0.23 ha of the known extent would result in an 0.001 % reduction. The proposed clearing requires minor clearing of Good and Degraded TEC, that forms part of a larger patch. The indirect impacts will be managed through a CEMP. **Banksia Woodlands of the Swan Coastal Plain TEC** GHD (2021) vegetation sub-unit C1 *Eucalyptus marginata*, *Banksia attenuata*, *Xylomelum occidentale* Woodland over *Kunzea glabrescens* Tall Shrubland community is consistent with the Banksia Woodlands TEC. This occurs along the edges of existing tracks and disturbed areas but is connected to larger continuous patches of the Banksia Woodlands TEC satisfying patch area and condition thresholds. Aqwest has refined the NVCP application area to reduce the extent of impact to the Banksia Woodland TEC. 0.89 ha of Banksia Woodland TEC, mapped as vegetation sub-unit C1 and in Very Good (0.31 ha), Good (0.40 ha) and Degraded to Completely Degraded (0.18 ha) will be directly impacted (cleared) within the NVCP application area. The Banksia Woodland TEC occurs within the NVCP application area in two locations within the unbuilt Centenary Road Reserve; Patch 1 Central section of Centenary Road and Patch 2 eastern section of Centenary Road. The area of Banksia Woodland TEC within the NVCP application area has existing disturbances with an old track present and introduced (grass and herb species) from the adjacent agricultural land. A dieback assessment (GSBL, 2020) mapped the area as mostly un-infested. The Banksia Woodlands TEC conservation advice (TSSC, 2016) estimates that > 335,000 ha of Banksia Woodlands TEC remains, with more than 253,000 ha remaining on the SCP. Based on this, the clearing of up to 0.89 ha (direct impact), would result in a reduction of up to 0.0003% in the reported extent of the Banksia Woodlands TEC. The Proposed Action requires minor clearing of Good and Degraded TEC, that forms part of a larger patch. The indirect impacts will be managed through an Environmental Management Plan.	

<table>
<tr><th colspan="2">Principle</th><th>Assessment</th><th>Outcome</th></tr>
<tr><td></td><td></td><td>Conclusion
It is considered the proposed clearing will result in minor residual impacts to Tuart Woodland and Banksia Woodland TECs, however applying a conservative approach it has been assessed that clearing may be at variance to this principle. As these TECs are listed under the EPBC Act, the proposed clearing has also been referred to Department of Agriculture, Water and Energy.
Minor residual impacts to TECs are proposed to be offset as per the Draft Offset Strategy (Attachment 4).</td><td></td></tr>
<tr><td>E</td><td>Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.</td><td>Regional vegetation was mapped by Heddle et al. (1980), based on major geomorphic units on the Swan Coastal Plain. The Heddle et al. (1980) mapping indicates the presence of three vegetation complexes within the NVCP application area:
– Karrakatta complex – central and south. Predominantly open forest of Eucalyptus gomphocephala (Tuart) - Eucalyptus marginata (Jarrah) - Corymbia calophylla (Marri) and woodland of Eucalyptus marginata (Jarrah) - Banksia species. Agonis flexuosa (Peppermint) is co-dominant south of the Capel River (approximately 4 ha within the NVCP application area).
– Southern River complex. Open woodland of Corymbia calophylla (Marri) - Eucalyptus marginata (Jarrah) - Banksia species with fringing woodland of Eucalyptus rudis (Flooded Gum) - Melaleuca rhaphiophylla (Swamp Paperbark) along creek (approximately 1.80 ha within the NVCP application area).
– Yoongarillup complex. Woodland to tall woodland of Eucalyptus gomphocephala (Tuart) with Agonis flexuosa in the second storey. Less consistently an open forest of Eucalyptus gomphocephala (Tuart) - Eucalyptus marginata (Jarrah) - Corymbia calophylla (Marri). South of Bunbury is characterised by Eucalyptus rudis (Flooded Gum)-Melaleuca species open forests (approximately 1.39 ha within the NVCP application area).
The extent of vegetation complexes has been determined by the South West vegetation remaining extent calculations maintained by DBCA (latest update March 2019 (GoWA, 2019)). As shown below, the extent remaining of the Karrakatta complex - Central and South and Southern River complexes is less than 30% of pre-European extent.
<table>
<tr><th>Vegetation Complex</th><th>Pre-European extent (ha)</th><th>Current extent (ha)</th><th>Proportion Pre-European extent remaining on Swan Coastal Plain (%)</th><th>Proportion of current extent remaining in all DBCA Managed Lands (%)</th><th>Reduction of current extent due to the proposed clearing (%)</th></tr>
<tr><td>Karrakatta complex – Central and South</td><td>53,080.99</td><td>12,467.20</td><td>23.49</td><td>8.07</td><td>0.03</td></tr>
<tr><td>Southern River</td><td>58,781.48</td><td>10,832.18</td><td>18.43</td><td>1.60</td><td>0.02</td></tr>
<tr><td>Yoongarillup</td><td>27,977.93</td><td>10,018.14</td><td>35.81</td><td>18.41</td><td>0.01</td></tr>
</table>
Note: Yellow shading indicates that less than 30 % remains.
At the local government scale, as shown below, the Southern River and Yoongarillup complexes have less than 30% remaining in the City of Bunbury (GoWA, 2019).</td><td>The proposed clearing is not likely to be at variance to this principle</td></tr>
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<table>
<tr><th colspan="2">Principle</th><th colspan="6">Assessment</th><th>Outcome</th></tr>
<tr><td></td><td></td><td colspan="6"><table>
<tr><th>Vegetation Complex</th><th>Pre-European extent (ha)</th><th>Current extent (ha)</th><th>Remaining Extent (%)</th><th>Proportion of the vegetation complex within the Bunbury LGA (%)</th><th>Reduction of current extent due to the Proposed Action (%)</th></tr>
<tr><td>Karrakatta complex – Central and South</td><td>756.61</td><td>283.96</td><td>37.53</td><td>1.43</td><td>1.31</td></tr>
<tr><td>Southern River</td><td>2,205.16</td><td>635.67</td><td>28.83</td><td>3.75</td><td>0.28</td></tr>
<tr><td>Yoongarillup</td><td>1,435.65</td><td>156.36</td><td>10.89</td><td>5.13</td><td>0.74</td></tr>
</table>
Note: Yellow shading indicates that less than 30 % remains.

The proposed clearing will result in 0.01% – 0.03% reduction in the current extent of these vegetation complexes within the Swan Coastal Plain and 0.28% to 1.31% reduction within the City of Bunbury.

Therefore, it is considered the proposed clearing is not likely to be at variance to this principle.</td><td></td></tr>
<tr><td>F</td><td>Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.</td><td colspan="6">The NVCP application area does not intercept any watercourses or wetlands categorised as per the following accessed from Data WA (GoWA, 2021):
– DBCA’s Directory of Important Wetlands in Australia (DBCA-045) - The closest Nationally Important Wetland is the Benger Swamp, located approximately 26.5 km to the north-east.
– Ramsar Sites (DBCA-010) – The closest Ramsar site, Vasse Wonnerup System, is located approximately 30 km south west of the NVCP application area.
– RIWI Act Rivers (DWER-036) - The closest watercourse is the Preston River proclaimed under the RIWI Act, located approximately 850 metres east of the eastern most extent of the NVCP application area.
Approximately 20% of the NVCP application area is comprised of 1.31 ha of Multiple Use Geomorphic Wetlands, including the following (GoWA, 2021):
– UFI 1104, Basin (Dampland) – 0.13 ha
– UFI 1105, Flat (Palusplain) – 0.04 ha
– UFI 14471, Basin (Sumpland) – 0.34 ha
– UFI 15450, Flat (Palusplain) – 0.26 ha
– UFI 15500, Basin (Dampland) – 0.53 ha.
Transitional wetland community vegetation types, 0.16 ha D1 and D2 in Degraded condition, were identified within the NVCP application area during the vegetation and flora survey (GHD, 2021c). Impact to wetland vegetation such Clay Pans TEC (E1 and E1) has been avoided during the design phase, therefore, it is considered the impact of proposed clearing on wetland vegetation has been minimised where practicable.

Whilst 0.16 ha of wetland community vegetation types were identified within the NVCP application it is considered the proposed clearing may be at variance to this principle due to the Degraded condition of this vegetation.</td><td>The proposed clearing may be at variance to this principle</td></tr>
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Principle		Assessment	Outcome
G	Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.	1:500,000 State interpreted bedrock geology mapping (DMIRS-016) indicates the NVCP application area is mapped as "*Wanbro Group: interbedded sandstone, siltstone and shale, minor conglomerate"* (GoWA, 2021). DWER groundwater salinity mapping (DWER-026) indicates that the Proposal Area is located in an area with a TDS concentration of 500-1000 mg/L (GoWA, 2021) which indicates marginal groundwater salinity (DER, 2021). The DPIRD soil salinity risk mapping (DPIRD-009) within the NVCP application area, indicates the soil salinity risk across the majority of the NVCP application area from "*<3% of map unit has a moderate to high salinity risk or is presently saline*" with a small section at the eastern end mapped as "*3-10% of map unit has a moderate to high salinity risk or is presently saline*" (GoWA, 2021). DPIRD Flood Risk Mapping (DPIRD-007) indicates that the majority of the Proposal Area is mapped as "*<3% of the map unit has a moderate to high flood risk*" (GoWA, 2021). The clearing of vegetation within the NVCP application area has the potential to cause short term impacts during construction. Based on the proposed management actions (including allowing cleared areas not required for final infrastructure to return to vegetation via natural regeneration), clearing is unlikely to cause appreciable deterioration in the quality of the land. A CEMP will be prepared to address issues such as erosion, and ASS management, designed to manage/ minimise, amongst other aspects, land degradation. It is considered that the proposed clearing is not likely to be at variance to this principle.	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.	The NVCP application area intercepts the following conservation areas (GoWA, 2021): – Crown Reserve 16044 (Lot 937 on Plan 220462) which lies directly to the north of the NVCP application area and forms part of Manea Park and the overarching recently proclaimed Kalgalup Regional Park. The Regional Park provides connectivity from Preston River to the coast (DBCA, 2021). – One Clearing Regulations – Environmentally Sensitive Areas (DWER-046) location mapped at the eastern end of the NVCP application area in association with the buffer of Conservation Category Geomorphic Wetlands, Swan Coastal Plain (DBCA-019) (UFI 1101). – One South West Regional Ecological Linkages (SWREL) within the Greater Bunbury Region (Molloy, Wood, Wallrodt, & Whisson, 2009) – Maidens/ Preston River Ecological Linkage (East – West Ecological Linkage). – The NVCP application area does not intercept any of the following (GoWA, 2021): – National parks/ other conservation reserves under DBCA Legislated Lands and Waters (DBCA-011), the closest Class A national park, Tuart Forest National Park (R 43059), is located approximately 11.5 km to the south west. – Redbook Recommended Conservation Reserves 1976-1991 (DBCA-029), the closest site is mapped approximately 970 m to the west. Due to the small area of potential clearing which is largely within road reserves and avoidance of vegetation within the adjacent reserve (R 16044) it is considered the proposed clearing is not likely to be at variance to this principle.	The proposed clearing is not likely to be at variance to this principle