Appendix C

Assessment Against the Ten Clearing Principles

Principle Assessment Outcome Native vegetation The 111.1 ha Proposal area includes approximately 41.8 ha of native vegetation as The proposed should not be described in the Detailed and Targeted flora and vegetation survey (Onshore clearing is not cleared if it Environmental, 2024b), comprised of nine vegetation units (Figure 3, Appendix A), in likely to be at comprises a high Completely Degraded to Very Good Condition (Figure 4, Appendix A). Up to 41.5 ha of variance to level of biological native vegetation is proposed to be cleared for the purpose of construction of the this principle Proposal. The remainder of the 111.1 ha Proposal area is mapped as 0.3 ha of FL diversity. EWCc MitHp Xp (Melaleuca scrub) and approximately 69.3 ha of Paddock (Completely Degraded) and Road/ Rail/ Tracks (Cleared). Vegetation units identified within native vegetation within the Proposal area include: FL EWCc MitHp Xp: Open Low Woodland A of Eucalyptus wandoo and Corymbia calophylla over Scrub of Melaleuca incana subsp. cf. tenella and Hakea prostrata over Low Scrub A (0.3 ha) - Good condition. FL MpNfXp PcDbVd HeLiMt: Open Scrub of Melaleuca preissiana, Nuytsia floribunda and Xanthorrhoea preissii over Low Heath C (2.1 ha) - Good condition. HC Em: Forest of Eucalyptus marginata subsp. marginata (Allocasuarina fraseriana) over parkland cleared (23.1 ha) - Degraded condition. HC Em Hh Tj: Forest of Eucalyptus marginata subsp. marginata (Allocasuarina fraseriana) over Low Heath D (2.7 ha) - Good to Very Good condition. HS Kg: Thicket of Kunzea glabrescens (1.6 ha) - Completely Degraded condition. LS EmAf AfBa DbAoCf: Open Woodland of Eucalvotus marginata subsp. marginata and Allocasuarina fraseriana over Low Forest A of Allocasuarina fraseriana and Banksia attenuata over Dwarf Scrub D (1.3 ha) - Good to Very Good condition. LS EmAf Xp PcDb: Low Woodland A of Eucalyptus marginata subsp. marginata and Allocasuarina fraseriana over Open Low Scrub A of Xanthorrhoea preissii over Low Heath D (2.5 ha) - Good condition. MS EmAf XoPI Hh: Forest of Eucalyptus marginata subsp. marginata and Allocasuarina fraseriana (Corymbia calophylla) over Open Scrub (6.6 ha) – Very Good condition. MS EmAf XoPIXp HhDb: Forest of Eucalyptus marginata subsp. marginata and Allocasuarina fraseriana over Open Scrub (to Scrub) (1.2 ha) - Good to Very Good condition. A search of the NatureMap database (DBCA, 2007-) identified 475 flora taxa (including subspecies and varieties), potentially occurring within 10 km of Proposal area comprising representing 59 families and 216 genera. Of the flora taxa previously recorded, 442 are native species and 33 are introduced species. A total of 189 flora taxa (including subspecies and varieties), representing 44 families and 123 genera, were recorded within the survey area. This total comprised 173 native taxa and 16 introduced flora taxa (Onshore Environmental, 2024b). A search of the NatureMap database (DBCA, 2007-) identified 280 vertebrate species potentially occurring within 10 km of Proposal area comprising 98 birds, 25 reptiles, 35 mammals, 10 amphibians and four fish. The 10 km radius used for the desktop assessment of the fauna assemblage included habitat types, such as marine habitats, that did not occur with the Proposal area. Therefore, marine species and fish, restricted to these habitat types are considered unlikely to occur within the Proposal area. Of the fauna species previously recorded, 163 are native species and nine are naturalised (introduced species). The Targeted fauna surveys undertaken by Onshore Environmental (2024a; 2023) identified 19 fauna taxa within the survey area (six birds, three reptiles and ten mammals) including 16 native taxa and 3 introduced species. The native vegetation proposed to be cleared within the Proposal area comprises 41.5 ha (28%) of the total 148.9 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 within the Proposal area. The Proposal has been developed to minimise the impacts of clearing native vegetation including the following: The rail spur is proposed to be located on the boundary of native vegetation (Collie State Forest) and existing disturbed land to the west (mining) to avoid fragmentation of remnant vegetation and reduce edge effects of clearing. The Proposal has been designed so as to avoid clearing of Black Cockatoo potential nesting trees.

Principle	Assessment	Outcome
	Based on relatively low biodiversity within the Proposal area compared to the study area (approximately 39% of flora and 9% of fauna taxa) it is considered that the proposed clearing is not likely to be at variance to this Principle.	
B Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna indigenous to Western Australia.	The Proposal area includes the following habitat types as described in the Targeted Black Cockatoo Habitat Tree Assessment (Onshore Environmental, 2024a) and shown in Figure 5 (Appendix A); Jarrah-Sheoak Forest (15.5 ha) Parkland cleared Jarrah Forrest remnant (20.6 ha) Parkland cleared Jarrah Forrest remnant (20.6 ha) Parkland cleared Jarrah Forrest remnant (20.6 ha) Pardock (57.3 ha) Previously cleared/ access tracks (17.4 ha). Up to 41.5 ha of native vegetation proposed to be cleared is mapped (Onshore Environmental, 2024a) as the following fauna habitat types with varying Black Cockatoo foraging values: Jarrah-Sheoak Forest (15.5 ha) – High quality Black Cockatoo foraging are Parkland cleared Jarrah Forrest remnant (20.0 ha) – High quality Black Cockatoo foraging Parkland cleared Jarrah Forrest remnant (20.0 ha) – High quality Black Cockatoo foraging Parkland cleared Jarrah Forrest remnant (20.0 ha) – High quality Black Cockatoo foraging Parkland cleared Jarrah Forrest remnant (20.0 ha) – High quality Black Cockatoo foraging Parkland cleared Jarrah Forrest remnant (20.0 ha) – High quality Black Cockatoo foraging Parkland cleared Jarrah Forrest remnant (20.0 ha) – High quality Black Cockatoo foraging Parkland cleared Jarrah Forrest remnant (20.0 ha) – High quality Black Cockatoo foraging Parkland cleared Jarrah Forrest remnant (20.0 ha) – High quality Black Cockatoo foraging Parkland cleared Jarrah Forrest remnant (20.0 ha) – High quality Black Cockatoo (20.2 ha) expected for foraging habitaty and conservation Act 2016 (20.2 ha) expected for foraging habitaty and conservation Act 2016 (20.2 ha) expected for foraging habitaty were observed by Onshore Environmental (2024a; 2023) during the Targeted fauna surveys in spring 2023: Carnaby's Cockatoo (2anda latinostris) (Endangered (EN) under the BC Act and EBPC Act) Baudin's Cockatoo (2anda baudinii) (EN under the BC and EBPC Act) Baudin's Cockatoo (2anda baudinii) (EN under the BC and EBPC Act) Bush-talled Phascogale (Phascogale tapoatafa sub	The proposed clearing may be at variance to this principle

Pr	inciple	Assessment	Outcome
		 35.5 ha High quality foraging habitat (Jarrah-Sheoak Forest and Parkland cleared Jarrah Forrest remnant) 	
		- 3.0 ha Low quality foraging habitat (Paddock).	
		 Foraging habitat within the indicative clearing footprint represents < 0.1% of the available foraging resources within a 12 km radius of the Project (estimated at 40,281.5 ha) – the 12 km radius represents the distance Black Cockatoos will generally forage while breeding. 	
		Brush-tailed Phascogale	
		Brush-tailed Phascogale individuals were observed on 14 occasions within Jarrah-Sheoak Forest within during the field survey (Onshore Environmental, 2023). Approximately 15.5 ha of suitable habitat (Jarrah-Sheoak Forest) is proposed to be cleared within the Proposal area. There is good connectivity with large areas of native vegetation to the west of the Proposal area reserved as State Forest (Collie State Forest and Muja State Forest) and the proposed clearing will not fragment fauna habitat, therefore it is considered that the impact of the proposed clearing unlikely to be significant for Brush-tailed Phascogale.	
		Western Brush Wallaby	
		Western Brush Wallaby individuals were observed on three occasions within Jarrah-Sheoak Forest within during the field survey (Onshore Environmental, 2023). Approximately 15.5 ha of suitable habitat (Jarrah-Sheoak Forest) is proposed to be cleared within the Proposal area. There is good connectivity with large areas of native vegetation to the west of the Proposal area reserved as State Forest (Collie State Forest and Muja State Forest) and the proposed clearing will not fragment fauna habitat, therefore it is considered that the impact of the proposed clearing unlikely to be significant for Western Brush Wallaby.	
		Conclusion	
		Prior to clearing, pre-clearance fauna searches will be undertaken within the area to be cleared and a suitably qualified fauna spotter will be on site during all native vegetation clearing activities.	
		Due to the presence of 35.5 ha of High quality Black Cockatoo foraging habitat, 3.0 ha of Low quality Black Cockatoo foraging habitat and 13 potential nesting trees within the clearing area it is considered that the proposed clearing may be at variance to this principle.	
С	Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, rare flora.	Searches of the EPBC Act PMST (DCCEEW, 2023a) and DBCA Threatened and Priority Flora databases (DBCA, 2023) identified the presence/ potential presence of 21 conservation significant flora taxa, including five Threatened taxa listed under the EPBC Act and/ or the BC Act, and 16 DBCA Priority listed species within a 10 km buffer of the survey area. Of these taxa Onshore Environmental (2024b) considered that seven are likely to occur, nine are possible and five are unlikely to occur in the survey area based on habitat available. However Onshore Environmental (2024b) did not identify any Threatened flora species listed under the EPBC Act and/ or the BC Act or DBCA Priority listed species during the field survey.	The proposed clearing is not likely to be at variance to this principle
		It is considered that the proposed clearing is not likely to be at variance to this principle.	
D	should not be cleared if it comprises the whole or a part of,	Desktop assessment of the EPBC Act PMST (DCCEEW, 2023a) and DBCA Threatened and Priority Ecological Communities databases (DBCA, 2023) did not identify any Threatened Ecological Communities (TECs) listed under the EPBC Act and/ or BC Act as present or likely to occur within the Proposal area or study area (10 km buffer from the Proposal area).	The proposed clearing is not likely to be at variance to this principle
	or is necessary for, the maintenance of a threatened ecological community.	The findings of the desktop assessment were confirmed on site during Detailed Flora and Vegetation Survey (Onshore Environmental, 2024b). It is considered that the proposed clearing is not likely to be at variance to this principle.	
Е	Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an	The Proposal is located in the Jarrah Forest Bioregion and the Northern Jarrah Forest Subregion (JAF01) as described by the Interim Biographic Regionalisation for Australia (IBRA) (DCCEEW, 2023b). The Northern Jarrah Forest Subregion is characterised by Jarrah-Marri forest on laterite gravels and, in the eastern part, by woodland of Wandoo – Marri on clayey soils. In areas of Mesozoic sediments, Jarrah forest occur in a mosaic with a variety of species-rich shrublands (Williams & Mitchell, 2002).	The proposed clearing is not likely to be at variance to this principle

Principle Assessment Outcome

area that has been extensively cleared. Broad scale (1:250,000) pre-European vegetation mapping of the area has been completed at an association level (Beard, 1975). This indicates the Proposal area intersects one vegetation association:

Vegetation Association 3 (West Darling 3 and Bridgetown 3) – Medium Forest;
 Jarrah-Marri.

Regional vegetation has been mapped based on major geomorphic units on the Jarrah Forest Bioregion and identifies three vegetation complexes within the Proposal area (Heddle, Loneragan, & Havel, 1980):

- Cardiff (CF): Open woodland of Allocasuarina fraseriana-Banksia spp.-Xylomelum occidentale-Nuytsia floribunda on sandy soils on valley slopes in the subhumid zone.
- Collie (CI): Open forest of Eucalyptus marginata subsp. marginata-Corymbia calophylla-Allocasuarina fraseriana on gravelly-sandy upland soils in the subhumid zone.
- Dwellingup (D1): Open forest of Eucalyptus marginata subsp. marginata-Corymbia calophylla on lateritic uplands in mainly humid and subhumid zones.
- Yarragil 2 (Yg2): Open forest of Eucalyptus marginata subsp. thalassica-Corymbia calophylla on slopes, woodland of Eucalyptus patens-Eucalyptus rudis with Hakea prostrata and Melaleuca viminea on valley floors in subhumid and semiarid zones.

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 of all complexes remaining is greater than 30% of pre-European extent.

Vegetation Complex	Pre- European extent (ha)	Current extent (ha)	Proportion Pre- European extent remaining on Swan Coastal Plain (%)	Proportion of current extent remaining in all DBCA Managed Lands (%)	Reduction of current extent due to the proposed clearing -
Cardiff (CF)	6,236.58	3,360.93	53.89	44.60	14.65 ha (0.44%)
Collie (CI)	11,004.73	7,354.88	66.83	58.62	25.93 ha (0.35%)
Dwellingup (D1)	208,490.90	181,038.81	86.83	82.29	0.03 ha (<0.01%)
Yarragil 2 (Yg2)	50,259.16	46,475.31	92.47	87.43	0.91 ha (<0.01%)

At the local government scale, as shown below, Dwellingup (D1) and Yarragil 2 (Yg2) has less than 30% remaining in the Shire of Collie (GoWA, 2019).

Vegetation Complex	Pre- European extent (ha)	Current extent (ha)	Remaining Extent (%)	Proportion of the vegetation complex within the Collie LGA (%)	Reduction of current extent due to the proposed clearing (%)
Cardiff (CF)	6,048.97	3,289.19	54.38	96.99	14.65 ha (0.45%)
Collie (CI)	9,228.61	5,704.89	61.82	83.86	25.93 ha (0.45%)
Dwellingup (D1)	44,161.91	39,817.90	90.16	21.18	0.03 ha (<0.01%)
Yarragil 2 (Yg2)	13,467.25	11,838.74	87.91	26.80	0.91 ha (<0.01%)

Note: Orange shading indicates that less than 30%, and red indicates that less than 10%, of the pre-European extent remains.

The proposed clearing will result in 0.44% to <0.01% reduction in the current extent of these vegetation complexes within the North Jarrah Forest and 0.45% to <0.01% reduction within the Shire of Collie. Therefore, it is considered the proposed clearing is not likely to be at variance to this principle.

Pi	inciple	Assessment	Outcome
F	Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.	 The Proposal area does not intercept any watercourses or wetlands categorised as per the following accessed from Data WA (GoWA, 2023): DBCA's Directory of Important Wetlands in Australia (DBCA-045) – The closest Nationally Important Wetland is the Benger Swamp, located approximately 45 km to the northwest. Ramsar Sites (DBCA-010) – The closest Ramsar site, the Peel-Yalgorup System, is located approximately 67 km to the northwest. RIWI Act Rivers (DWER-036) – The closest RIWI listed river is the upper tributary of the Preston River which is located approximately 16 km to the southwest. Tributaries of the Collie River lie approximately 200 m north, 300 m east and 400 m south of the Proposal area and the main body of the river is located approximately 1.0 km to the north (GoWA, 2023). One vegetation type <i>Phlebocarya</i> Low Heath C (FL MpNFXp PcDbVd HeLiMt), within the Proposal area, is described as Open Scrub of <i>Melaleuca preissiana</i>, <i>Nuytsia floribunda</i> and <i>Xanthorrhoea preissii</i> over Low Heath C of <i>Phlebocarja ciliata</i>, <i>Dasypogon bromellifolius</i> and <i>Verticordia densiflora</i> subsp. <i>densiflora</i> over Open Tall Sedges of <i>Hypolaena exsulca</i>, <i>Lyginia imberbis</i> and <i>Mesomelaena tetragona</i> on grey clayey sand on swampy flats (Onshore Environmental, 2024b). Further consultation with Onshore Environmental (pers comms D. Brearley, 8 December 2023) indicates that there was no evidence of this vegetation type being subject to seasonal inundation and is not considered to be a wetland vegetation type. Therefore, 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
G	Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.	DWER groundwater salinity mapping (DWER-026) indicates that the Proposal area is located in an area with a TDS concentration of <500 mg/L (GoWA, 2023) which indicates fresh groundwater salinity (DER, 2021). The DPIRD soil salinity risk mapping (DPIRD-009) indicates the soil salinity risk within Proposal area is mapped as L1 "<3% of map unit has a moderate to high salinity risk or is presently saline" (GoWA, 2023). The Australian Soil Resource Information System (ASRIS) indicates that the Proposal area is located in an area of Extremely Low Probability of Occurrence of Acid Sulfate Soil risk (CSIRO, 2023). DPIRD Flood Risk Mapping (DPIRD-007) (GoWA, 2023) indicates that the majority of the Site is mapped as "<3% of the map unit has a moderate to high flood risk" and the south east corner of the Proposal area is mapped as "30-50% of the map unit has a moderate to high flood risk" and "3-10% of the map unit has a moderate to high flood risk" (Figure 7, Appendix A). The Surface Water Management Plan (GHD, 2023d) outlines management strategies manage/ minimise impacts to surface quality during construction and ongoing operation of the Proposal. The clearing of vegetation within the Proposal area has the potential to cause short term impacts during construction. Based on the proposed management actions clearing is unlikely to cause appreciable deterioration in the quality of the land. 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 Proposal area does not intercept any of the following (GoWA, 2023): Environmentally Sensitive Areas (ESA) (DWER-046), the nearest ESA is approximately 13 km to the north, which corresponds to the Register of the National Estate – Surface Management Priority Area, Asquith Road, Treesville, WA (DCCEEW, 2023c). Redbook Recommended Conservation Reserves 1976-1991 (DBCA-029), the closest site, is mapped approximately 6 km to the north which corresponds with a Register of the National Estate – Jarrah Forest National Park (proposed) (DCCEEW, 2023c). The Proposal area intersects DBCA managed Collie State Forest (Class A) to the south including parts of parts Lot 1486 on Plan 110882, Lot 1505 on Plan 110876 and Land ID 4035609 listed as Crown Land under Section 5(1)(d) under the Conservation and Land Management Act 1984 (CALM Act) (Figure 2, Appendix A). Management actions will be implemented as per a Construction Environmental Management Plan, developed prior to the construction phase, to mitigate impacts on the environmental values of the Collie State Forest. 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

Principle	Assessment	Outcome
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.	 The entirety of the Proposal area lies within the following (GoWA, 2023): Collie Groundwater Area proclaimed under the <i>Rights in Water and Irrigation Act</i> 1914 (RIWI Act) (RIWI Act, Groundwater Areas (DWER-034)) Collie River Irrigation District proclaimed under the RIWI Act (RIWI Act, Surface Water Areas and Irrigation Districts (DWER-037)) Wellington Dam Catchment Area managed under the <i>Country Areas Water Supply</i> Act 1947 (CAWS Act) as part of the Clearing Control Catchments (DWER-004). The Proposal area is not located within a Public Drinking Water Source Areas (PDWSA – DWER-033) managed under the CAWS Act (GoWA, 2023). DPIRD Flood Risk Mapping (DPIRD-007) (GoWA, 2023) indicates that the majority of the Site is mapped as "<3% of the map unit has a moderate to high flood risk" and the south east corner of the Proposal area is mapped as "30-50% of the map unit has a moderate to high flood risk" and "3-10% of the map unit has a moderate to high flood risk" (Figure 7, Appendix A). Clearing of vegetation within the Proposal area has the potential to cause minor short-term impacts to a limited area during construction. The Surface Water Management Plan (GHD, 2023d) outlines management strategies manage/ minimise impacts to surface quality during construction and ongoing operation of the Proposal. Management Plan, developed prior to the construction phase, to mitigate impacts on the quality of surface or underground water during construction works. 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
J Native vegetation should not be cleared if clearing the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.	DPIRD Flood Risk Mapping (DPIRD-007) (GoWA, 2023) indicates that the majority of the Site is mapped as "<3% of the map unit has a moderate to high flood risk" and the south east corner of the Proposal area is mapped as "30-50% of the map unit has a moderate to high flood risk" and "3-10% of the map unit has a moderate to high flood risk" (Figure 7, Appendix A). Appropriate surface water management measures will be implemented as part of the construction and operation of the Proposal via the Water Management Plan. The proposed clearing is not expected to be likely to cause or exacerbate the incidence or intensity of flooding as this area has been largely cleared in the past. 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