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WESTERN AUSTRALIA

Clearing Assessment Report/ Vegetation Management Plan (VMP)

—
CPS 818

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Western Australia.*

Raymond Road – Widening and Overlay
H061 Raymond Road (Australind Roelands Link)
South West Region
EOS 3461

D24#1375262
November 2024

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1 PROPOSAL

1.1 Purpose and Justification

The intent of the proposal is to upgrade Australind Roelands Link (herein referred to as Raymond Road), including widening and overlay (repair of the pavement) with minor intersection improvements at Forrest Highway and Ranson Drive. Raymond Road is a primary distributor road. Traffic volume estimates from Monday to Sunday in 2019/2020 were 4,257 vehicles (19.7% Heavy Vehicles) and there have been 12 crashes (1x hospital severity, 8 x proprietary damage only and 2 x medical) between Forrest Highway and 0.6 Straight Line Kilometre (SLK) on Raymond Road (Main Roads 2024a). The proposal purpose is to therefore improve road condition, longevity and ultimately road user safety.

1.1.1 Main Roads Approach to Road Safety and the Environment

Main Roads is committed to minimising the environmental impacts of all of its activities and manages the State Road network to achieve balanced economic, social, safety and environmental benefits for the community. Main Roads recognises that Western Australia's environment is significant from a global perspective and the unique conservation values that are contained within its road reserve. Main Roads road network often adjoins natural areas and, in some locations, the reserve itself hosts remnant vegetation with high environmental values. Although the reserves were not established for this purpose, Main Roads recognises that it has a responsibility to conserve the environmental values that occur within the State's road network and minimise the impact its proposals have on the environment. In addition to providing a safe and efficient road network for all people using the roads under its control, Main Roads is also committed to protecting the natural environment.

In accordance with National and State Government road safety policies, Main Roads is also committed to substantially reducing road trauma on the road network through Safe System principles. The Safe System approach acknowledges that more than two thirds of all serious crashes are due to human error rather than deliberate risk taking (e.g. speeding or drink driving) and seeks to improve behaviour through education and enforcement while managing the safety of vehicles, speeds and the road and road infrastructure. It is shown that improving sub-optimal road formation will substantially reduce the likelihood and severity of road crashes. For example, according to the Road Safety Management Guideline, increasing the sealed shoulder from 0.5 m to 2 m will reduce Killed and Seriously Injured numbers by more than 50%.

As the statutory authority responsible for providing and managing a safe and efficient main road network in Western Australia, Main Roads focuses on improving road safety by thoroughly considering all environmental, economic and community benefits and impacts. It operates on a hierarchy of avoiding, minimising, reducing and then, if required, offsetting our environmental impacts. This has been achieved through changes in proposal scope and design. Main Roads regularly reduces its clearing footprint by restricting earthworks limits for proposals, steepening batters, installing barriers, establishing borrow pits in cleared paddocks and avoiding temporary clearing for storage, stockpiles and turn around bays to avoid and minimise its impacts.

Further details on measures to avoid, minimise and reduce are provided in Section 1.5.

1.2 Proposal Scope

To improve road condition and road user safety, the following works will be undertaken as part of the proposal:

- Widening of Raymond Road between 0 SLK and 0.6 SLK to a total width of 12 metres (m) (3.5 m lanes and 2.5 m sealed shoulders on each side).
- Drainage improvements – independently graded drain north of existing services on the northern side of Raymond Road.
- Minor intersection improvements at Forrest Highway and Ranson Drive.

To facilitate the proposal, clearing of native vegetation along the northern side of Raymond Road between 0.2 SLK and 0.5 SLK will be required (Figure 1).

1.3 Proposal Location

The Native Vegetation Clearing Area is located on Raymond Road (Australind Roelands Link) between 0.2 SLK to 0.5 SLK, in the Shire of Harvey as shown in Figure 1.

The central coordinate of the proposal is -33.286618° S, 115.7551822° E.

1.4 Clearing Details

Proposed Clearing to be undertaken using CPS 818: 0.0125 hectares (ha).

Areas of Native Vegetation Clearing:

The location of native vegetation to be cleared is shown in Figure 1. The 5-kilometre (km) Study Area is shown in Figure 2 and street view images of the native vegetation proposed to be cleared is shown in Plates 1 – 3.

Type of Native Vegetation:

Two *Corymbia calophylla* (Marri) trees, one *Kingia australis* (fallen over but still alive) and one *Melaleuca raphiophylla* as shown in Plates 1 - 3.



Figure 1: Native Vegetation Clearing Area

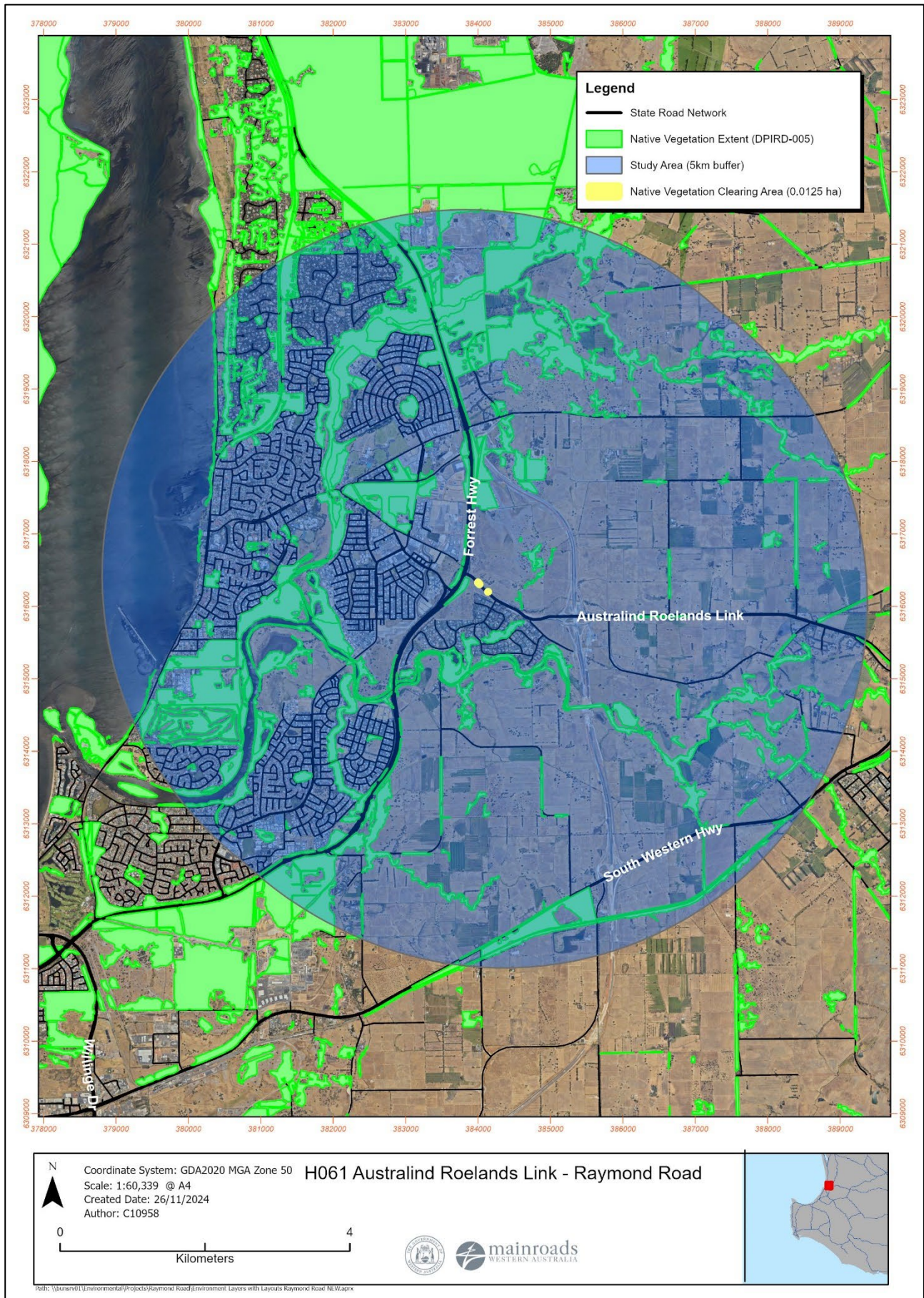


Figure 2: Study Area



Plate 1: Street view image Marri (1) to be cleared.



Plate 2: Street view image Marri (2) and *Kingia australis* to be cleared.



Plate 3: Street view image of one *Melaleuca raphiophylla* proposed to be cleared.

1.5 Alternatives to Native Vegetation Clearing Considered During Proposal Development

The following alternatives to clearing were considered for this Proposal:

- Do not upgrade the road, however the pavement is in a poor condition and there have been 12 crashes between Forrest Highway and 0.6 SLK Raymond Road already. If no upgrades are undertaken this will likely result in a poorer safety outcome and further degradation of the State Road asset.
- Reducing the speed limit to minimise clearing requirements, while still balancing safety (driver fatigue) and freight efficiency. Reducing speed limits is not a preferred option for Main Roads for this location. This option is unlikely to be effective and reduces the efficacy of a primary distributor road (Raymond Road) that accommodates high volumes of traffic.
- Main Roads retains frangible vegetation where a clear zone is to be established for road projects. For this project, however, clearing will only be required to accommodate the road formation, with no clear zone being established. Accordingly, the retention of frangible vegetation does not apply to this Proposal.

1.6 Measures to Avoid, Minimise, Reduce and Manage Proposal Clearing Impacts

The design and management measures implemented to avoid and minimise the potential clearing impacts of the Proposal are provided in Table 1.

Table 1. Measures Undertaken to Avoid, Minimise, Reduce and Manage the Proposal Clearing Impacts.

Design or Management Measure	Discussion and Justification
Widening on existing centreline	Widening on existing centreline has been considered however this would require relocation of several services. Due to costs associated with this and the redundancy of the pavement once the ultimate project case is constructed, this option was deemed unfeasible.
Alternative alignment located to the south (where carpark is located)	The carpark to the south of Raymond Road is owned and used by South 32 Worsley Alumina and it has been agreed that impacts to the carpark will be minimised. An alternative alignment located to the south of Raymond Road is not feasible. The widening of the road on the southern side is therefore not viable for this reason, in addition to the proximity of residences to the south.
Simplification of design to reduce number of lanes	The proposed widening and overlay works are critical in improving road safety and further degradation of a State Road asset. The pavement condition is poor and there have been 12 crashes between Forrest Highway and 0.6 SLK on Raymond Road already. There is no ability to simplify the design any further. The upgrade of the road to a total width of 12m (across both lanes) is to ensure the major distributor road is in accordance with Main Roads Standards.
Installation of barriers	Barriers will have limited impact on the proposed works and therefore have not been considered further as it would not assist with the issue of improving the pavement overlay and widening the road for safety.
Installation of kerbing	Kerbing will have limited impact on the proposed works and therefore has not been considered further as it would not assist with the issue of improving the pavement overlay and widening the road for safety.

1.7 Approved Policies and Planning Instruments

The clearing of native vegetation in Western Australia is regulated under the EP Act and the *Environmental Protection (Clearing of Native Vegetation) Regulations 2004* (Clearing Regulations).

In addition to the matters considered in accordance with section 51O of the EP Act, Main Roads has also had regard to the below instruments where relevant.

Other Legislation potentially relevant for assessment of clearing and planning/other matters:

- *Biodiversity Conservation Act 2016* (WA) (BC Act)
- *Conservation and Land Management Act 1984* (WA) (CALM Act)
- *Country Areas Water Supply Act 1947* (WA) (CAWS Act)
- *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act)
- *Planning and Development Act 2005* (WA) (P and D Act)
- *Soil and Land Conservation Act 1945* (WA)
- *Rights in Water and Irrigation Act 1914* (WA) (RIWI Act)
- *Aboriginal Heritage Act 1972* (WA).

Environmental Protection Policies:

- Environmental Protection (Peel Inlet - Harvey Estuary) Policy 1992
- Environmental Protection (Western Swamp Tortoise Habitat) Policy 2011.

Other relevant policies and guidance documents:

- Environmental Offsets Policy (Government of Western Australia, 2011)
- A guide to the assessment of applications to clear native vegetation (Government of WA, December 2014)
- Procedure: Native vegetation clearing permits (Government of WA, October 2021)
- Environmental Offsets Guidelines (Government of Western Australia, 2014)
- Technical guidance – Flora and Vegetation Surveys for Environmental Impact Assessment (EPA, 2016)
- Technical guidance – Terrestrial Vertebrate Fauna Surveys for Environmental Impact Assessment (EPA, 2020)
- Approved conservation advice under section 266B of the EPBC Act for threatened flora/fauna/vegetation communities.
- Carnaby's Cockatoo (*Calyptorhynchus latirostris*) Recovery Plan (Department of Parks and Wildlife, 2013)
- Referral guideline for 3 WA threatened black cockatoo species (DAWE, 2022)

2 SCOPE AND METHODOLOGY ASSESSMENT OF CLEARING

Native vegetation will be cleared to accommodate this Proposal. This clearing will be undertaken using the Main Roads Statewide Clearing Permit CPS 818. To comply with CPS 818, Main Roads must prepare a Clearing Assessment Report (CAR).

This CAR outlines the key activities associated with the Proposal, the existing environment and an assessment of native vegetation clearing. This assessment provides an evaluation of the vegetation clearing impacts associated with the Proposal using the ten Clearing Principles listed under s51 of the *Environmental Protection Act 1986* (EP Act) and strategies used to manage vegetation clearing.

2.1 Report Terminology and Sources

The following terms are used in this CAR:

- **Native Vegetation Clearing Area (NVCA)** – The maximum amount of remnant native vegetation proposed to be cleared. This consists of four trees: two *Corymbia calophylla* (Marri), one *Kingia australis* (Grass tree) and one *Melaleuca raphiophylla* with a clearing footprint of 0.0125 ha.
- **Study Area** – Area covered by the Desktop Assessment. The Study Area is a 5 km radius of the Native Vegetation Clearing Area.

2.2 Desktop Assessment

A desktop assessment was undertaken by viewing internal datasets and other government agency managed databases, and consulting with relevant stakeholders where necessary. GIS layer viewing and mapping is done using ArcGIS Pro and/or Main Roads corporate mapping system known as iMaps. Referencing of the GIS layers accessed is done under the relevant methodology section of each clearing principle. Government managed databases were searched to locate additional information, which are found under References in Section 9.

2.3 Surveys and Assessments

An Environmental Site Inspection, including a Black Cockatoo Habitat Assessment (Main Roads, 2024b), was undertaken to inform this assessment as outlined in Table 2 and a summary of the findings presented in Section 3.

Table 2. Summary of Biological and Targeted Surveys Relevant to the Proposal

Consultant and Survey Name	Survey Details
Main Roads (September 2024b) Raymond Road Environmental Site Inspection.	Survey Area: 0.0125 ha. Type: A Black Cockatoo habitat assessment was conducted through the measurement of the Diameter of Breast Height (DBH) of targeted trees. Identification of native remnant species of vegetation and non-native species. Timing: September 2024. Survey Results Shapefile TRIM Ref: D24#1460162 Document TRIM Ref: D24#1197587.

3 SURVEY RESULTS

3.1 Summary of Biological Assessments

A site visit was conducted to determine vegetation condition, species composition and if vegetation was representative of remnant native vegetation (Section 4). The clearing area was traversed on foot and the entire extent of vegetation was assessed (Figure 1).

A Black Cockatoo foraging and breeding habitat assessment was undertaken through the measurement of Diameter Breast Height (DBH) of targeted trees given the potential to be utilised by Black Cockatoos. Methodology followed that in Main Roads (2023).

Of the remnant native vegetation identified to be cleared, two *Corymbia calophylla* (Marri) were identified. Both trees were >500 DBH and therefore, deemed as suitable potential habitat trees without hollows. The two Marri trees are in the road reserve on the northern side of Raymond Road and were assessed to be in a *degraded* condition.

4 VEGETATION DETAILS

4.1 Proposal Site Vegetation Description

From the site visit undertaken by Main Roads (2024b), the remnant native vegetation proposed to be cleared consists of two *Corymbia calophylla*, one *Kingia australis* and one *Melaleuca raphiophylla* that was in a *degraded to completely degraded* vegetation condition (Main Roads 2024b). The NVCA comprises 0.0125 ha, as shown in Figure 1.

4.2 Vegetation Association/Complexes and Representation

From the desktop assessment, the clearing area is located within the Pre-European Bassendean (1000) Vegetation System Association (DPIRD-006) and mostly within the Bassendean Complex-Central and South -Vegetation Complex (DBCA-046). This Vegetation Complex is characterised by woodland of *Eucalyptus marginata* (Jarrah) - *Allocasuarina fraseriana* (Sheoak) - *Banksia* species to low woodland of *Melaleuca* species, and sedgelands on the moister sites.

Table 3 and 4 provide details of the remaining extent of vegetation in this Vegetation Association and Vegetation Complex respectively.

Table 3: Pre-European Vegetation Representation

Pre-European Vegetation Association	Scale	Pre-European Extent (ha)	Current Extent (ha)	% Remaining	% Current Extent in DBCA Managed Land (proportion of pre-European Extent)
Veg Assoc No. 1000 - Mosaic: Medium forest; jarrah-marri / Low woodland; banksia / Low forest; teatree (<i>Melaleuca</i> spp.)	Statewide	99,836	27,769	27.81	5.19
	IBRA Bioregion Swan Coastal Plain	94,175	24,869	26.41	5.06
	IBRA Sub-region Perth	94,175	24,869	26.41	5.06
	Local Government Authority Shire of Harvey	20,122	8,209	40.80	12.40

Table 4: Vegetation Complexes (Hedde/Mattiske) within Native Vegetation Clearing Area

Vegetation Complex	Pre-European Extent (ha)	Current Extent (ha)	% Remaining
Bassendean Complex-Central and South	87,476.26	23,508.66	26.87

5 ASSESSMENT AGAINST THE TEN CLEARING PRINCIPLES

In assessing whether the Proposal's clearing is likely to have a significant impact on the environment, the Proposal was assessed against the ten Clearing Principles (EP Act, Schedule 5).

Each principle has been assessed in accordance with the former Department of Environment Regulation (now Department of Water and Environmental Regulation (DWER) '[A Guide to the Assessment of Applications to Clear Native Vegetation](#)' (Department of Environment Regulation, 2014) and other relevant clearing permit application decision reports prepared by DWER.

The proposed clearing is at variance to Clearing Principle (b) and not at or not likely to be at variance with the remaining Clearing Principles.

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

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

The NVCA comprises of two *Corymbia calophylla* (Marri) trees, one *Kingia australis* and one *Melaleuca raphiophylla* tree (Main Roads, 2024b).

Study Area

A Search of the Department of Biodiversity, Conservation and Attractions (DBCA) Threatened and Priority Flora and Western Australian Herbarium databases identified 14 conservation significant flora species in the 5 km Study Area:

- *Diuris drummondii* (Threatened (T))
- *Caladenia huegelii* (T)
- *Drakaea elastica* (T)
- *Synaphea odocoileops* (Priority 1 (P1))
- *Bolboschoenus medianus* (P1)
- *Chamaescilla gibsonii* (P3)
- *Lasiopetalum membranaceum* (P3)
- *Carex tereticaulis* (P3)
- *Verticordia attenuata* (P3)
- *Caladenia speciosa* (P4)
- *Acacia semitrullata* (P4)
- *Pultenaea skinneri* (P4)
- *Aponogeton hexatepalus* (P4)
- *Ornduffia submersa* (P4)

The Commonwealth Protected Matters Search Tool (PMST) identified an additional 11 threatened flora species in the 5 km Study Area:

- *Banksia mimica*
- *Synaphea stenoloba*

- *Lambertia echinata subsp. occidentalis*
- *Diuris purdiei*
- *Andersonia gracilis*
- *Banksia squarrosa subsp. argillacea*
- *Diuris micrantha*
- *Eleocharis keigheryi*
- *Drakaea micrantha*
- *Chamelaucium roycei* N.G. Marchant
- *Morelotia australiensis*

DBCA database searches identified the following Threatened Ecological Communities (TECs)/Priority Ecological Communities (PECs) within the 5km Study Area:

- Herb rich shrublands in clay pans (floristic community type 8 as originally described in Gibson et al. 1994) (Endangered – BC Act; which is also a component of the Clay Pans of the Swan Coastal Plain Ecological Community, listed as Critically Endangered under the EPBC Act).
- Tuart (*Eucalyptus gomphocephala*) woodlands and forests of the Swan Coastal Plain (Priority 3-listed PEC by DBCA and Critically Endangered TEC under the EPBC Act).
- *Corymbia calophylla* — *Xanthorrhoea preissii* woodlands and shrublands, Swan Coastal Plain (floristic community type 3c as originally described in Gibson et al. 1994) (Endangered – BC Act and Endangered under the EPBC Act and described as *Corymbia calophylla* - *Xanthorrhoea preissii* woodlands and shrublands of the Swan Coastal Plain).
- Dense shrublands on clay flats (floristic community type 9 as originally described in Gibson et al. 1994) (Endangered – BC Act; which is also a component of the Clay Pans of the Swan Coastal Plain Ecological Community, listed as Critically Endangered under the EPBC Act).
- *Banksia* Woodlands of the Swan Coastal Plain ecological community (Priority 3-listed PEC by DBCA and Endangered TEC under the EPBC Act).
- Subtropical and Temperate Coastal Saltmarsh (Priority 3-listed PEC by DBCA and Vulnerable TEC under the EPBC Act).
- Southern Swan Coastal Plain *Eucalyptus gomphocephala*-*Agonis flexuosa* woodlands (floristic community type 25) (Priority 3-listed PEC by DBCA and can be a component of the Endangered Banksia Woodlands of the Swan Coastal Plain EPBC-listed TEC or the Critically Endangered Tuart woodlands and forests of the Swan Coastal Plain EPBC-listed TEC).

The Commonwealth PMST identified an additional TEC within the 5km Study Area:

- Honeymyrtle shrubland on limestone ridges of the Swan Coastal Plain Bioregion (Critically Endangered – EPBC Act).

Native Vegetation Clearing Area

No Threatened or Priority flora species or TEC/PEC were identified in the NVCA during the DBCA database search or the Main Roads Site Inspection (Main Roads, 2024b). The vegetation proposed to be cleared does not resemble any threatened flora, priority flora, TEC or PEC, based on the assessment undertaken during the Site Inspection. Given the Main Roads Site Inspection was undertaken by suitably qualified persons during the recommended survey timing for the South West Botanical Province, it is expected that any conservation significant flora or ecological communities would have been detected, if present.

As discussed further under Principle (b), the two Marri trees within the NVCA provide potential breeding and foraging habitat for the three Black Cockatoo (BC) species:

- Forest Red-tailed Black Cockatoo (*Calyptrorhynchus banksii naso*) – Vulnerable under the BC Act and EPBC Act – Likely to occur.
- Carnaby's Black Cockatoo (*Zanda latirostris*) – Endangered under the BC Act and EPBC Act – Likely to occur.
- Baudin's Black Cockatoo (*Zanda baudinii*) – Endangered under the BC Act and EPBC Act – Likely to occur.

Surrounding land use to the north of the NVCA Area is rural (paddock cleared farmlands) and to the south is rural/residential.

During the Site Inspection (Main Roads, 2024b), the following weed species were identified within the NVCA: Arum Lily (*Zantedeschia aethiopica*) and Watsonia (*Watsonia bulbifera*). The Arum Lilly is a declared weed in Western Australia.

Given the above, a summary of the attributes of the proposed clearing area is as follows:

- adjacent to an existing primary distributor road
- the trees (limited to three species) are devoid of understorey and have been rated as being in a *degraded to completely degraded* condition
- separated from good or better condition vegetation by disjunct isolated trees and planted vegetation interspersed with cleared areas
- is not connected with local or regional ecological linkages
- does not provide a high local/regional ecological value
- does not support conservation significant flora species
- is not considered TEC/PEC

The NVCA comprises a lower level of biological diversity compared to that within the greater Study Area and is devoid of diversity which reflects the long history of disturbance.

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

Methodology

- Aerial photography
- DCCEEW (2024)
- Government GIS Shapefiles:
 - DBCA Threatened and Priority Ecological Community database search (October 2024)
 - DBCA Threatened and Priority flora database search (October 2024)
 - Bush Forever (Region Scheme - Special Areas) (October 2024)
 - Ecological Linkages (October 2024)
 - DBCA WA Herbarium (October 2024)
- Main Roads (2024b)

(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 is at variance to this Principle.

The NVCA comprises two *Corymbia calophylla* (Marri) trees, one *Kingia australis* and one *Melaleuca raphiophylla*. The two Marri trees are suitable DBH trees without hollows.

Study Area

A search of the DBCA Threatened and Priority fauna database identified the following conservation significant fauna species in the 5 km Study Area:

Common Name	Scientific Name	WA Listing
Curlew sandpiper	<i>Calidris ferruginea</i>	Threatened - Critically Endangered
Eastern curlew	<i>Numenius madagascariensis</i>	Threatened - Critically Endangered
Western ringtail possum	<i>Pseudocheirus occidentalis</i>	Threatened - Critically Endangered
Great knot	<i>Calidris tenuirostris</i>	Threatened - Critically Endangered
Red knot	<i>Calidris canutus</i>	Threatened - Endangered
Australasian bittern	<i>Botaurus poiciloptilus</i>	Threatened - Endangered
Australian lesser noddy	<i>Anous tenuirostris melanops</i>	Threatened - Endangered
Australian sea-lion	<i>Neophoca cinerea</i>	Threatened - Endangered
Baudin's cockatoo	<i>Zanda baudinii</i>	Threatened - Endangered
Lesser sand plover	<i>Charadrius mongolus</i>	Threatened - Endangered
Carnaby's cockatoo	<i>Zanda latirostris</i>	Threatened - Endangered
Carter's freshwater mussel	<i>Westralunio carteri</i>	Threatened - Vulnerable
Greater sand plover	<i>Charadrius leschenaultii</i>	Threatened - Vulnerable
Forest red-tailed black cockatoo	<i>Calyptorhynchus banksii naso</i>	Threatened - Vulnerable
Black-tailed godwit	<i>Limosa limosa</i>	Specially Protected - Migratory
Broad-billed sandpiper	<i>Limicola falcinellus</i>	Specially Protected - Migratory
Common greenshank	<i>Tringa nebularia</i>	Specially Protected - Migratory
Crested tern	<i>Thalasseus bergii</i>	Specially Protected - Migratory
Red-necked stint	<i>Calidris ruficollis</i>	Specially Protected - Migratory
Ruddy turnstone	<i>Arenaria interpres</i>	Specially Protected - Migratory
Sharp-tailed sandpiper	<i>Calidris acuminata</i>	Specially Protected - Migratory
Southern giant petrel	<i>Macronectes giganteus</i>	Specially Protected - Migratory
South-western brush-tailed phascogale, wambenger	<i>Phascogale tapoatafa wambenger</i>	Specially Protected - Conservation Dependent
Fork-tailed swift	<i>Apus pacificus</i>	Specially Protected - Migratory
Glossy ibis	<i>Plegadis falcinellus</i>	Specially Protected - Migratory
Grey plover	<i>Pluvialis squatarola</i>	Specially Protected - Migratory
Marsh sandpiper	<i>Tringa stagnatilis</i>	Specially Protected - Migratory

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Pacific golden plover	<i>Pluvialis fulva</i>	Specially Protected - Migratory
Peregrine falcon	<i>Falco peregrinus</i>	Specially Protected - Other Specially Protected
Whimbrel	<i>Numenius phaeopus</i>	Specially Protected - Migratory
Wood sandpiper	<i>Tringa glareola</i>	Specially Protected - Migratory
Blue-billed duck	<i>Oxyura australis</i>	Priority
Quenda	<i>Isodon fusciventer</i>	Priority
SCP shield-backed trapdoor spider	<i>Idiosoma sigillatum</i>	Priority
Water-rat	<i>Hydromys chrysogaster</i>	Priority
Western false pipistrelle	<i>Falsistrellus mackenziei</i>	Priority

The Commonwealth PMST identified the following threatened species in the 5 km Study Area:

Common Name	Scientific Name
Scalloped Hammerhead	<i>Sphyrna lewini</i>
Western Ringtail Possum, Ngoolangit	<i>Pseudocheirus occidentalis</i>
Curlew Sandpiper	<i>Calidris ferruginea</i>
Eastern Curlew	<i>Numenius madagascariensis</i>
Northern Royal Albatross	<i>Diomedea sanfordi</i>
Amsterdam Albatross	<i>Diomedea amsterdamensis</i>
Australian Sea-lion	<i>Neophoca cinerea</i>
Red-tailed Tropicbird (Indian Ocean), Indian Ocean Red-tailed Tropicbird	<i>Phaethon rubricauda westralis</i>
Northern Siberian Bar-tailed Godwit	<i>Limosa lapponica menzbieri</i>
Common Greenshank	<i>Tringa nebularia</i>
Leatherback Turtle	<i>Dermochelys coriacea</i>
Loggerhead Turtle	<i>Caretta caretta</i>
Australasian Bittern	<i>Botaurus poiciloptilus</i>
Australian Painted Snipe	<i>Rostratula australis</i>
Southern Giant-Petrel	<i>Macronectes giganteus</i>
Tristan Albatross	<i>Diomedea dabbenena</i>
Baudin's Black Cockatoo	<i>Zanda baudinii</i>
Carnaby's Black Cockatoo	<i>Zanda latirostris</i>
Malleefowl	<i>Leipoa ocellata</i>
Southern Royal Albatross	<i>Diomedea epomophora</i>
White-capped Albatross	<i>Thalassarche steadi</i>
Greater Sand Plover	<i>Charadrius leschenaultii</i>
Sharp-tailed Sandpiper	<i>Calidris acuminata</i>
Fairy Prion (southern)	<i>Pachyptila turtur subantarctica</i>
Balston's Pygmy Perch	<i>Nannatherina balstoni</i>
Australian Fairy Tern	<i>Sternula nereis nereis</i>
Chuditch	<i>Dasyurus geoffroii</i>
Red Knot	<i>Calidris canutus</i>
Carter's Freshwater Mussel	<i>Westralunio carteri</i>
Forest Red-tailed Black-Cockatoo	<i>Calyptorhynchus banksii naso</i>
Flatback Turtle	<i>Natator depressus</i>
Grey Falcon	<i>Falco hypoleucos</i>

Green Turtle	<i>Chelonia mydas</i>
Freshwater Sawfish	<i>Pristis pristis</i>
Wandering Albatross	<i>Diomedea exulans</i>
Northern Giant Petrel	<i>Macronectes halli</i>
Campbell Albatross	<i>Thalassarche impavida</i>
Quokka	<i>Setonix brachyurus</i>
Black-browed Albatross	<i>Thalassarche melanophris</i>

Native Vegetation Clearing Area

No conservation significant fauna species were observed during the site inspection (Main Roads, 2024b) or identified via DBCA database searches in the NVCA. From the DBCA database search there are four western ringtail possum records within one kilometre of the NVCA. However, the NVCA is not mapped as suitable western ringtail possum habitat, according to DBCA-049. The NVCA consists of isolated trees along a busy road, with cleared agricultural land to the north, a road and carpark to the south and no connectivity to patches of remnant native vegetation. The NVCA does not contain peppermint (*Agonis flexuosa*) which is a key feeding species. The NVCA is unlikely to comprise the whole or a part of, or be necessary for the maintenance of, a significant habitat for the western ringtail possum.

The NVCA contains no aquatic habitat, therefore aquatic species identified in database searches would not occur. The native vegetation, which is in a degraded to completely degraded condition, consists of three species located on the side of a major road. The remnant trees are fragmented and provide unsuitable habitat for most threatened species listed to be within the Study Area. Most of the conservation significant fauna species previously identified from the desktop Study Area are avian species that could be potential visitors, however none would be expected to be reliant on habitat within the NVCA, given the availability of higher quality habitat locally (such as vegetated and riparian corridors along the Brunswick and Collie Rivers).

From the DBCA database search there is a Black Cockatoo (BC) Roost Site located approximately 300 m south. The NVCA is consequently within a BC Roost Site Buffer zone. The NVCA is located within *Carnaby's Cockatoo Unconfirmed Breeding Areas within the Swan Coastal Plain and Jarrah Forest IBRA Regions*. Signs of Black Cockatoo foraging was observed during the Main Roads Site Inspection, namely chewed *Corymbia calophylla* (marri) nuts. However, the nuts were old and no recent evidence of usage was observed.

The NVCA provides potential suitable breeding and foraging habitat in the form of the two Marri trees for the three BC species, namely:

- Forest Red-tailed Black Cockatoo (*Calyptrorhynchus banksii naso*) – Vulnerable under the BC Act and EPBC Act – Likely to occur.
- Carnaby's Black Cockatoo (*Zanda latirostris*) – Endangered under the BC Act and EPBC Act – Likely to occur.
- Baudin's Black Cockatoo (*Zanda baudinii*) – Endangered under the BC Act and EPBC Act – Likely to occur.

The overall native vegetation clearing will result in the removal of potential Black Cockatoo habitat as follows:

- 0.011 ha (of the total 0.0125 ha) of low to medium quality foraging habitat *Corymbia calophylla* (marri).
- Two *Corymbia calophylla* (marri) trees which are suitable DBH trees (potential breeding trees).
- no known roosting trees.
- no trees that contain suitable hollows.

- does not comprise vegetation within 13 km of a known BC breeding site.

Given the above, the two Marri trees within the proposed NVCA provide low to medium quality foraging habitat for Black Cockatoos and are deemed potential breeding habitat trees (>500 mm DBH). No known roosting or suitable breeding trees (with hollows) are proposed to be cleared. There is a known roost site approximately 300 m to the south. Old evidence of foraging was observed; therefore, Black Cockatoo species are likely to utilise foraging habitats within the local area on occasion.

There is approximately 2,461 ha and 9,916 ha of native vegetation remaining (DPIRD-005) within a 6 km and 12 km radius of the NVCA respectively. In the context of the wider Swan Coastal Plain, the clearing of two Marri trees (0.011 ha) is unlikely to significantly impact on the foraging resources for the three Black Cockatoo species.

Based on the above, the proposed clearing is at variance to this Principle.

Methodology

- Aerial photography
- DCCEEW (2024)
- Government GIS Shapefiles:
 - DBCA Threatened and Priority fauna database search (Accessed October 2024)
 - DBCA FRTBC/BC/WTBC Breed Sites (Accessed October 2024)
 - DBCA BC Roost Sites (Accessed October 2024)
 - DBCA BC Roosting and Breeding Sites Buffered (Accessed October 2024)
 - DBCA Carnabys Cockatoo Unconfirmed Breeding Areas within the Swan Coastal Plain and Jarrah Forest IBRA Regions (Accessed October 2024)
- Main Roads (2024b)

(c) Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora.**Proposed clearing is not at variance to this Principle.**

DBCA and Protected Matters database searches identified 14 threatened flora species in the 5 km Study Area. No threatened flora was identified within the NVCA via database searches or during the Main Roads September 2024(b) Site Inspection.

Given the Main Roads site inspection was undertaken by suitably qualified persons during the recommended survey timing for the South West Botanical Province, it is expected that threatened flora would have been detected, if present. Based on the lack of threatened flora recorded and the overall condition of the vegetation (degraded to completely degraded), lack of understorey and isolation, it is unlikely that threatened flora is present or that the native vegetation proposed to be cleared is necessary for the continued existence of threatened flora.

Based on the above, the proposed clearing is not at variance to this Principle.

Methodology

- Aerial photography
- DCCEEW (2024)
- Government GIS shapefiles:
 - DBCA Threatened flora database search (Accessed October 2024)
 - DBCA WA Herbarium (Accessed October 2024)
- Main Roads (2024b)

(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 at variance to this Principle.

Study Area

DBCA database searches identified the following Threatened Ecological Communities (TECs) within the 5km Study Area:

- Herb rich shrublands in clay pans (floristic community type 8 as originally described in Gibson et al. 1994) (Endangered – BC Act; which is also a component of the Clay Pans of the Swan Coastal Plain Ecological Community, listed as Critically Endangered under the EPBC Act)
- Tuart (*Eucalyptus gomphocephala*) woodlands and forests of the Swan Coastal Plain (Critically Endangered – EPBC Act)
- *Corymbia calophylla* — *Xanthorrhoea preissii* woodlands and shrublands, Swan Coastal Plain (floristic community type 3c as originally described in Gibson et al. 1994) (Endangered – BC Act and Endangered under the EPBC Act and described as *Corymbia calophylla* - *Xanthorrhoea preissii* woodlands and shrublands of the Swan Coastal Plain)
- Dense shrublands on clay flats (floristic community type 9 as originally described in Gibson et al. 1994) (Endangered – BC Act; which is also a component of the Clay Pans of the Swan Coastal Plain Ecological Community, listed as Critically Endangered under the EPBC Act)
- *Banksia* Woodlands of the Swan Coastal Plain ecological community (Endangered – EPBC Act)
- Subtropical and Temperate Coastal Saltmarsh (Vulnerable – EPBC Act)
- Southern Swan Coastal Plain *Eucalyptus gomphocephala*-*Agonis flexuosa* woodlands (floristic community type 25) (can be a component of the Endangered *Banksia* Woodlands of the Swan Coastal Plain EPBC- listed TEC or the Critically Endangered Tuart woodlands and forests of the Swan Coastal Plain EPBC-listed TEC)

The Commonwealth PMST identified an additional TEC within the 5km Study Area:

- Honeymyrtle shrubland on limestone ridges of the Swan Coastal Plain Bioregion (Critically Endangered – EPBC Act)

Native Vegetation Clearing Area

No TECs were identified in the NVCA based on a DBCA database search. The nearest mapped TEC is the *Banksia* Woodlands of the Swan Coastal Plain ecological community, mapped as occurring approximately 70 metres north-west at its nearest point.

No TECs were identified in the NVCA during the site inspection (Main Roads, 2024b). Given that the native vegetation (consisting of three species) is not representative of any TECs, native vegetation does not comprise the whole or a part of or is necessary for the maintenance of a threatened ecological community.

Based on the above, the proposed clearing is not at variance to this Principle.

Methodology

- Aerial photography
- Government GIS shapefiles:
 - DBCA Threatened Ecological Community database search (Accessed October 2024)
 - WALGA South West Ecological Linkages (Accessed October 2024)
- Main Roads (2024b).

(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 recognise that the retention of 30% or more of the pre-clearing extent of each ecological community is necessary if Australia's biological diversity is to be protected (Commonwealth of Australia 2001) except in constrained areas (Perth and Peel) where 10% representation should be maintained.

The NVCA is located on the Swan Coastal Plain, an area that has been extensively cleared for agriculture and urban and industrial development. Within the Shire of Harvey there is around 27% of the Bassendean Complex Central and South remaining and approximately 12.5% of the Bassendean Vegetation Association 1000 within DBCA managed land.

The Bassendean Complex Central and South is characterised by woodland of *Eucalyptus marginata* (Jarrah) - *Allocasuarina fraseriana* (Sheoak) - *Banksia* species to low woodland of *Melaleuca* species, and sedgelands on the moister sites. Whilst the clearing is mapped within the Bassendean Complex Central and South, except for the *Melaleuca*, the trees proposed to be cleared (Marri and *Kingia*) are not species of which this Complex is characteristic of. The proposed vegetation to be cleared consists of three species in a degraded to completely degraded condition that is not deemed to provide any valuable ecological function to this Vegetation Complex.

The 0.0125 ha of proposed clearing is not significant as a remnant due to:

- the very small area of isolated trees proposed to be cleared in the road reserve amongst planted vegetation.
- the degraded to completely degraded condition of the vegetation, consisting of trees over a ground cover stratum dominated by introduced weed species with no understorey native species.
- surrounding cleared farmland and residential land.

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

Methodology

- Aerial photography
- Government GIS shapefiles:
 - Pre-European vegetation (Accessed October 2024)
 - Vegetation complexes (Accessed October 2024)
- Main Roads (2024b)
- Government of Western Australia (2019a)

(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 not likely to be at variance to this Principle.

There are no natural watercourses within or adjacent to the NVCA. The nearest natural watercourse (minor, non-perennial) is approximately 200 m south. This flows into a Conservation Category Wetland (CCW) (also classed as an Environmentally Sensitive Area) and ultimately to the Collie River.

The NVCA is within a mapped Multiple Use (MU) palusplain wetland area that spans more than 10,000 ha. The definition of a MU wetland is *Wetlands with few remaining important attributes and functions* (EPA, 2008). Land use is primarily residential and rural/farmland, where substantial development/infill and historical clearing has been undertaken, substantially altering local hydrology.

The two Marri trees and *Kingia* on the roadside are not considered wetland/water associated vegetation. *Melaleuca raphiophylla* is typically associated with watercourses and wetland areas, the *Melaleuca* proposed for removal however is in a low-lying drainage depression along the roadside and it receives sheet flow from adjacent farmland areas. None of the vegetation proposed to be cleared is growing on the bed and banks of a watercourse (i.e. it is not riparian vegetation) and it is not considered to be associated with or have impact on, the values of any remnant wetland.

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

Methodology

- Aerial photography
- EPA (2008)
- Government GIS shapefiles:
 - Geomorphic Wetlands (Accessed October 2024)
 - Ramsar Wetlands (Accessed October 2024)
 - Important Wetlands (Accessed October 2024)
 - Watercourses (Accessed October 2024)
 - RIWI Act Rivers (Accessed October 2024)
 - Environmentally Sensitive Areas (Accessed November 2024)
- Main Roads (2024b)

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

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

The NVCA is mapped within the Bassendean Soil Landscape System (DPIRD-064). This system is described as *dunes and sandplains with pale deep sand, semi-wet and wet soil. Banksia-paperbark woodlands and mixed heaths*. The NVCA is mapped within an area classed as "L1: <3% of map unit has a moderate to high risk of flooding and high to extreme risk of water erosion" (DPRID-007 and DPIRD-013). Given the minor removal of 0.0125 ha of vegetation over a linear road length, it is unlikely that the works will cause appreciable waterlogging or water erosion.

The NVCA is mapped as *Class 2: Moderate to low risk of ASS occurring within 3m of natural soil surface but high to moderate risk of ASS beyond 3m of the natural soil surface*. The removal of 0.0125 ha of native vegetation is unlikely to result in acidification of the local area or surrounding environment.

Clearing will occur in a previously disturbed, roadside environment and includes the reinstatement of roadside drainage. The proposed clearing is very minor in scale and located in a highly modified environment and is therefore not likely to cause appreciable land degradation.

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

Methodology

- Aerial photography
- Government GIS Shapefiles:
 - Acid Sulfate Soil Risk Map (Accessed October 2024)
 - Soil landscape land quality – Water Erosion Risk (Accessed October 2024)
 - Soil landscape land quality – Flood Risk (DPIRD-007) (Accessed October 2024)
- Main Roads (2024b)

(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 at variance to this Principle.

Based on DBCA database searches, there are no conservation areas within or adjacent to the NVCA. The nearest DBCA managed lands is the Kalgulup Conservation Park, located approximately 3.5 km to the north-north-west. The nearest Environmentally Sensitive Area (ESA) is a Conservation Category Wetland (CCW), located approximately 250 m to 500 m south.

The proposed clearing of native vegetation will not impact on conservation areas due to the following:

- only 0.0125 ha of native vegetation is proposed to be cleared.
- the nearest DBCA Managed Land is approximately 3.5 km away.
- There is an ESA (CCW) located approximately 250 m – 500 m south, however the removal of three species of native vegetation from the roadside is not likely to impact on the environmental values of this ESA.
- no ecological linkages, either locally or regionally will be impacted by the proposed clearing.

Based on the above, the proposed clearing is not at variance to this Principle.

Methodology

- Aerial photography
- Government GIS Shapefiles:
 - DBCA Legislated Lands and Waters & Lands of Interest (Accessed November 2024)
 - Environmentally Sensitive Areas (Accessed November 2024)
 - Geomorphic Wetlands (conservation category wetlands only) (Accessed November 2024)
 - Ramsar Wetlands (Accessed November 2024)
 - Important Wetlands (Accessed November 2024)
 - South West Ecological Linkages (WALGA) (Accessed November 2024)
- Main Roads (2024b)

(i) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water.

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

GIS databases indicate the NVCA is not within a public drinking water supply catchment, RIWI act surface water or irrigation districts area or clearing control catchment. The NVCA is within a proclaimed groundwater area (Bunbury Groundwater Area). The very small extent of proposed clearing is not likely to cause deterioration in the quality of underground water.

There are no natural watercourses within or adjacent to the NVCA. The nearest natural watercourse (minor, non-perennial) is approximately 200 m south and separated from the NVCA by residential properties. The proposed clearing of four trees/0.0125 ha of roadside vegetation, which is in a degraded to completely degraded condition is unlikely to cause deterioration in the quality of surface water. Clearing and subsequent road upgrade works will include standard roadside drainage management measures, further minimising any potential impacts to downstream water quality.

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

Methodology

- Aerial photography
- Government GIS Shapefiles:
 - RIWI Act, Surface Water Areas and Irrigation Districts (Accessed October 2024)
 - CAWSA Part 2A Clearing Control Catchments (Accessed October 2024)
 - RIWI Act, Groundwater Areas (Accessed October 2024)
 - Public Drinking Water Source Areas ((Accessed October 2024)
 - Hydrography Linear ((Accessed October 2024)
 - Medium Scale Topo Contour Line (LGATE-015) ((Accessed October 2024)
- Main Roads (2024b)

(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 at variance to this Principle.

The clearing works require the removal of 0.0125 ha of roadside vegetation. The clearing will occur in a previously disturbed environment along the road to facilitate the widening/overlay and drainage improvements along Raymond Road. There are no natural watercourses or definitive wetlands that intersect or are adjacent to the NVCA.

The NVCA is within the Bassendean Soil Landscape System (DPIRD-064). This system is described as dunes and sandplains with pale deep sand, semi-wet and wet soil. The NVCA is mapped within an area classed as "L1: <3% of map unit has a moderate to high risk of flooding and high to extreme risk of water erosion" (DPRID-007 and DPIRD-013). During the site inspection (Main Roads 2024b) it was noted that the soil on the northern side of Raymond Road was waterlogged. Given the minor removal of 0.0125 ha of vegetation which is to facilitate road works including drainage upgrades, including an independently graded drain north on the northern side of Raymond Road, it is unlikely that the works will cause waterlogging or exacerbate the incidence or intensity of flooding. The clearing is required to enable road upgrades that will ultimately improve roadside drainage and minimise flood risk.

Based on the above, the proposed clearing is not at variance to this Principle.

Methodology

- Aerial photography
- Government GIS Shapefiles:
 - Soil Mapping (Accessed November 2024)
 - Soil landscape land quality - Waterlogging Risk (Accessed November 2024)
 - Soil landscape land quality - Flood Risk (Accessed November 2024)
- Main Roads (2024b).

6 VEGETATION MANAGEMENT

Main Roads will avoid clearing native vegetation where possible. Where clearing cannot be avoided then this clearing is kept to a minimum. A Vegetation Management Plan (VMP) has been developed to manage and minimise vegetation clearing for the Proposal (refer to Appendix 1).

7 REHABILITATION, REVEGETATION AND OFFSETS

7.1 Revegetation and Rehabilitation

No temporary clearing will be undertaken as part of the Proposal activities and therefore no revegetation or rehabilitation is proposed.

7.2 Offset Proposal

In accordance with CPS 818 condition 11(a), to offset the residual impacts from clearing 0.011 ha (two Marri trees) of low to moderate quality foraging and potential breeding habitat for threatened black cockatoo species, Main Roads has developed an offset proposal in accordance the current WA environmental offsets Policy.

The proposed offset consists of a financial contribution. Main Roads will work with DWER on the finalisation of the offset proposal.

8 STAKEHOLDER CONSULTATION

Main Roads will undertake stakeholder consultation in accordance with CPS 818 Condition 8.

9 COMPLIANCE WITH CPS 818

Table 5 summarises what further pre-clearing impact assessment is required in accordance with CPS 818.

Table 5. Summary of Additional Management Actions Required by CPS 818

Impact of Clearing	Yes/No or NA	Further Action Required
1. The CAR indicates that the clearing is 'At Variance' or 'May be at Variance' with one or more of the Clearing Principles.	Yes	1. Clearing Report to be published on website and submissions sought for 21 days. 2. Submissions invited from relevant parties, including the LGA, the owner or occupier of the land and other stakeholders in accordance with Condition 8 of CPS 818. 3. VMP has been completed, refer to Appendix 1. 4. An offset proposal for approval by DWER will be prepared. 5. Summary of submissions and a statement addressing each of those submissions to be published on website.
2. Clearing is at variance or may be at variance with Clearing Principle (g) land degradation, (i) surface or underground water quality or (j) the incidence of flooding.	No	No further action required.
3. Clearing is at variance with Clearing Principle (g) land degradation, (i) surface or underground water quality and (j) the incidence of flooding.	No	No further action required.
4. The Proposal involves clearing for temporary works (as defined by CPS 818).	No	No further action required.
5a. Proposal is within a Region that: • has rainfall greater than 400mm; and, • is South of the 26th parallel; and, • works are necessary in 'Other than dry conditions'; and, • works have potential for uninfested areas to be impacted.	No	Standard Vehicle and Plant management actions from Annexure 204B (TABLE 204B.9.1), <u>Hygiene Checklists</u> and <u>Vehicle, Plant and Machinery Hygiene Register Template</u> will be applied.

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Impact of Clearing	Yes/No or NA	Further Action Required
5b. Do the proposed works require clearing within or adjacent to DBCA managed lands in non-dry conditions?	No	No further action required.
6. Main Roads has been notified by DWER or an environmental specialist that the area to be cleared is susceptible to a pathogen other than dieback.	No	No further action required.
7. Weeds are likely to spread to and result in environmental harm to adjacent areas of native vegetation that are in good or better condition.	No	No further action required.
8. Did an environmental specialist conduct the survey or field assessment?	Yes	The Environmental Specialist undertaking the Site Inspection was suitably qualified and had more than three years' experience.
9. Did an environmental specialist prepare the Assessment Report and any other associated documentation including the VMP, Dieback Management Plan or Offset Proposal?	Yes	The Environmental Specialist preparing the Assessment Report and any other associated documentation including the VMP, Dieback Management Plan or Offset Proposal was suitably qualified and had more than three years' experience.

10 REFERENCES

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11 APPENDICES

Appendix 1: Vegetation Management Plan

H061 AUSTRALIND ROELANDS LINK/RAYMOND ROAD WIDENING

Purpose and Scope

This Vegetation Management Plan (VMP) has been prepared by Main Roads for the purpose of managing native vegetation clearing impacts associated with the H061 Australind Roelands Link/Raymond Road Widening proposal.

The following works are proposed as part of the project:

- Widening of Raymond Road between 0 SLK and 0.6 SLK to a total width of 12m (3.5 m lanes and 2.5 m sealed shoulders both lanes).
- Drainage Improvements – independently graded drain north of existing services on the northern side of Raymond Road.
- Minor intersection improvements at Forrest Highway and Ranson Drive.

In specified circumstances, Main Roads VMP is required to be approved by Department of Water and Environmental Regulation (DWER) as a condition of the Main Roads Statewide Clearing Permit CPS 818.

Actions, and their relevant timeframes, from this VMP will be documented within the relevant Tender Documentation (Specifications), such as:

- Specification 204 Environmental Management
- Specification 301 Vegetation Clearing and Demolition
- Specification 303 Materials and Water
- Specification 304 Revegetation
- Specification 304 Rehabilitation of Disturbed Areas.

Once the Contract has been awarded, the Superintendent's Contract Management Team (or equivalent roles) are to ensure that the requirements are implemented by the Contractor.

Avoiding, Mitigating and Managing the Impacts of Clearing

A number of measures were undertaken to during the development and design of the proposal to reduce its impact the environment.

For further information on the alternatives that were considered during the proposal development, please go to Section 1.5 of the Clearing Assessment Report for the proposal.

For further information on the measures undertaken to avoid, minimise, reduce and manage the proposal's clearing impacts, please go to Section 1.6 of the Clearing Assessment Report for the proposal.

VMP Actions

General vegetation management actions to be undertaken are shown in **Appendix 1.1: General Vegetation Management Actions for Clearing**.

Appendix 1. 1: General vegetation management actions for clearing

Management Action	Responsibility	Timing
The Contractor must ensure plant, machinery and equipment, is cleaned down prior to arrival to the site.	Superintendent	During construction
Vehicle hygiene inspection checklists will be utilised to manage potential weed/dieback spread on earth-moving machinery.	Superintendent	During construction
No known dieback infested soil, mulch, fill or other material will be permitted into the works area.	Superintendent	During construction
All Clearing must be undertaken in such a way to allow fauna to move out of the Clearing area.	Superintendent	During construction
The Limits of Vegetation Clearing will be demarcated on site prior to the commencement of clearing to prevent entry into areas of native vegetation.	Superintendent	During construction
Natural drainage pathways will not be obstructed from stockpile gravel, crushed rock and excavated material.	Superintendent	During construction
All recently cleared, exposed and loose surface areas shall be protected from wind, water and soil erosion.	Superintendent	During construction
The Contractor will ensure that clearing of native vegetation is only undertaken in dry conditions, unless otherwise approved and / or directed by the Superintendent.	Superintendent	During construction
The Contractor must develop and detail a Site induction training program as part of the CEMP that includes as a minimum, the significant environmental impacts, actual or potential, of work activities associated with the Contract	Superintendent	During construction

The above actions will be documented within Specifications 204 and 301.

Main Roads' preclearing **Hold Point** applies to all projects that require vegetation clearing, as documented within Specification 301 (301.12 PRE-CLEARING PROCESS). Accordingly, all Hold Point actions must be signed off prior to clearing commencing. This Hold Point comprises the following actions:

1. Prior to the commencement of any clearing operations, the Contractor must certify for the Superintendent's verification and approval that the following activities have been completed in accordance with the relevant specification:
 - a) The pegging of limits of vegetation clearing has been undertaken.
 - b) The pegged vegetation clearing area does not exceed the Limits of Vegetation Clearing.
 - c) All pre-clearing weed control has been undertaken.
 - d) Suitable and unsuitable topsoil zones have been identified.
 - e) Vegetation and topsoil stockpile locations have been identified.
 - f) All clearing machinery is compliant with controls.

Monitoring and Maintenance Program

The Superintendent's Contract Management Team shall monitor the implementation of management actions that are a **Hold Point**. **Hold Point** actions must be signed off by the Superintendent's Representative to confirm it has occurred and recorded within the Superintendent's Contract Management Plan.

Non-Compliance

Non-compliance with management actions will trigger corrective actions, preventative actions and/or an incident investigation. Non-compliances will be recorded with Main Roads incident management system and reviewed by Main Roads Manager Environment.

The need for reporting non-compliances with VMP management actions to DWER will be determined as part of an incident investigation.